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As confidentially submitted with the Securities and Exchange Commission on January 23, 2015

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CATABASIS PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**26-3687168**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

One Kendall Square
Bldg. 1400E, Suite B14202
Cambridge, Massachusetts 02139
(617) 349-1971
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jill C. Milne, Ph.D.
President and Chief Executive Officer
Catabasis Pharmaceuticals, Inc.
One Kendall Square
Bldg. 1400E, Suite B14202
Cambridge, Massachusetts 02139
(617) 349-1971
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Steven D. Singer, Esq. **Rosemary G. Reilly, Esq.** **Wilmer Cutler Pickering Hale and Dorr LLP** **60 State Street** **Boston, MA 02109** **Telephone: (617) 526-6000** **Fax: (627) 526-5000**	**Divakar Gupta** **Darren DeStefano** **Brent B. Siler** **Cooley LLP** **1114 Avenue of the Americas** **New York, NY 10036-7798** **Telephone: (212) 479-6000** **Fax: (212) 479-6275**

Approximate date of commencement of proposed sale to the public:
As soon as practicable after this Registration Statement is declared effective.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. o

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer o	Accelerated filer o	Non-accelerated filer ☒ (Do not check if a smaller reporting company)	Smaller reporting company o

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(2)
Common Stock, $0.001 par value per share	$	$

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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SUBJECT TO COMPLETION, DATED , 2015

PRELIMINARY PROSPECTUS

Shares

Catabasis Pharmaceuticals, Inc.

Common Stock
$ per share

This is the initial public offering of our common stock. We are selling shares of common stock in this offering. We currently expect the initial public offering price to be between $ and $ per share of common stock.

We have granted the underwriters an option to purchase up to additional shares of common stock to cover over-allotments.

We intend to list our common stock on The NASDAQ Global Market under the symbol "CATB."

Investing in our common stock involves risks. See "Risk Factors" beginning on page 9.

We are an "emerging growth company" under applicable Securities and Exchange Commission rules and will be eligible for reduced public company disclosure requirements. See "Summary—Implications of Being an Emerging Growth Company."

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospects. Any representation to the contrary is a criminal offense.

	Per Share	Total
Public Offering Price	$	$
Underwriting Discount(1)	$	$
Proceeds to Catabasis Pharmaceuticals, Inc. (before expenses)	$	$

(1) We refer you to "Underwriting" beginning on page 154 for additional information regarding underwriter compensation.

The underwriters expect to deliver the shares to purchasers on or about , 2015 through the book-entry facilities of The Depository Trust Company.

Citigroup **Cowen and Company**

Oppenheimer & Co. **Wedbush PacGrow Life Sciences**

, 2015

We are responsible for the information contained in this prospectus. We have not authorized anyone to provide you with different information, and we take no responsibility for any other information others may give you. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained in this prospectus is accurate as of any date other than the date on the front of this prospectus.

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SUMMARY

This summary highlights, and is qualified in its entirety by, the more detailed information and financial statements included elsewhere in this prospectus. This summary does not contain all of the information that may be important to you. You should read and carefully consider the entire prospectus, especially our financial statements and the notes thereto appearing at the end of this prospectus and the "Risk Factors" section of this prospectus, before deciding to invest in our common stock.

Except as otherwise indicated herein or as the context otherwise requires, references in this prospectus to "Catabasis," "the company," "we," "us" and "our" refe to Catabasis Pharmaceuticals, Inc.

Overview

We are a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutics based on our proprietary Safely Metabolized And Rationally Targeted, or SMART, linker technology platform. Our SMART linker technology platform is based on the concept of treating diseases by simultaneously modulating multiple targets in one or more related disease pathways. We engineer bi-functional product candidates that are conjugates of two molecules, or bioactives, each with known pharmacological activity, joined by one of our proprietary SMART linkers. Our SMART linker conjugates are designe for enhanced efficacy and improved safety and tolerability. Our initial focus is on treatments for orphan diseases. We are also developing other product candidates for the treatment of serious lipid disorders.

Our Product Candidates

We have applied our SMART linker technology platform to build a development pipeline that includes three clinical-stage product candidates and multiple programs in preclinical development. The following chart summarizes key information regarding our product candidates. We hold worldwide rights to all of our product candidates.

Product Candidate	Indication	Target	Pre-clinical	Phase 1	Phase 2	Phase 3	Anticipated Milestones
CAT-1004	• Duchenne Muscular Dystrophy	NF-κB					• Expect to initiate Phase 1/2 trial in the first half of 2015
CAT-2003	• Refractory Severe Hypertriglyceridemia • Multifactorial Chylomicronemia	SREBP					• Expect to complete Phase 2a trial in the second quarter of 2015
CAT-2054	• Hypercholesterolemia	SREBP					• Expect to complete Phase 1 trial in the third quarter of 2015 • Expect to initiate Phase 2a trial in the fourth quarter of 2015
CAT-4001	• Amyotrophic Lateral Sclerosis • Friedreich's Ataxia	NRF2/ NF-κB					• Expect to initiate Phase 1 trial in 2016

CAT-1004

Our lead product candidate, CAT-1004, is an oral small molecule that we believe has the potential to be a disease-modifying therapy for the treatment of Duchenne muscular dystrophy, or DMD, a fatal genetic disorder involving progressive muscle degeneration. CAT-1004 is a SMART linker conjugate of

salicylate and the omega-3 fatty acid docosahexaenoic acid, or DHA, that we designed to enhance the activity of salicylate and DHA in modulating the NF-kB pathway at multiple points. NF-kB, or nuclear factor kappa-light-chain-enhancer of activated B cells, is a protein that coordinates cellular response to damage, stress and inflammation and plays an important role in muscle health. In skeletal muscle, activated NF-kB drives muscle degeneration and suppresses muscle regeneration. Chronic activation of NF-kB has been reported in multiple skeletal muscle disorders, including muscular dystrophies, atrophy and inflammatory myopathies. In anima models of DMD, CAT-1004 inhibited activated NF-kB, reduced muscle inflammation and degeneration and increased muscle regeneration. In Phase 1 clinical trials, CAT-1004 inhibited NF-kB and was well tolerated with no observed safety concerns. We plan to initiate a Phase 1/2 clinical trial of CAT-1004 for the treatment of DMD in the first half of 2015 and expect to report top-line Phase 2 data in mid-2016. If the results from our Phase 1/2 clinical trial are positive, we intend to conduct single six-month Phase 3 pivotal trial of CAT-1004 to seek marketing approval. The U.S. Food and Drug Administration, or FDA, has granted CAT-1004 orphan drug designation for the treatment of DMD.

DMD is a rare pediatric disorder caused by various mutations in the dystrophin gene that result in a lack of functional dystrophin in muscle fibers, leading to inexorable muscle weakness. DMD occurs almost exclusively in males, occurring in approximately 1 in 3,500 live male births. Based on this incidence rate, we estimate that DMD affects a total of approximately 15,000 patients in the United States and approximately 19,000 patients in the European Union.

There are no therapies approved for the treatment of DMD in the United States. Corticosteroid therapy is often prescribed to treat the inflammation underlying DMD and to delay loss of ambulation. While corticosteroids have demonstrated efficacy in DMD patients, corticosteroids also can cause significant complications du to systemic toxicities, including growth suppression, reduction in bone strength and compromise of the immune system. A number of companies are developing therapies to treat DMD in patients with specific mutations in the dystrophin gene. Based on the prevalence of the specific mutations that the three most advanced of these product candidates are designed to address, these product candidates would be expected to be effective in an aggregate of approximately 26% of DMD patients. We believe that DMD patients treated with these dystrophin therapies will continue to require treatments to reduce muscle inflammation and enhance muscle regeneration.

Based on its mechanism of action in suppressing activated NF-kB, we believe that CAT-1004 has the potential to combine reduction of inflammation, adipose tissue infiltration and muscle degeneration with positive effects on muscle regeneration, all of which may allow patients to retain muscle function longer. In addition, we believe that CAT-1004 has the potential to be effective in all DMD patients, regardless of the underlying mutation, and provide significant benefit to patients both as monotherapy and when used in combination with other therapies.

CAT-2000 Series

Our two other clinical-stage product candidates, CAT-2003 and CAT-2054, are members of our CAT-2000 series. This series of compounds consists of oral small molecule product candidates that modulate the Sterol Regulatory Element Binding Protein, or SREBP, pathway. SREBP is a master regulator of lipid metabolism and controls the metabolism of both triglycerides and low density lipoprotein cholesterol, or LDL-C.

CAT-2003

CAT-2003 is an orally administered SMART linker conjugate of the omega-3 fatty acid eicosapentaenoic acid, or EPA, and nicotinic acid that we designed to modulate the SREBP pathway in the intestine. We are developing CAT-2003 for the treatment of patients with multifactorial chylomicronemia syndrome, or MFC, an refractory severe hypertriglyceridemia, or rSHTG. Both of

these diseases involve extremely elevated triglyceride levels that significantly increase the risk of pancreatitis. In Phase 2 clinical trials, CAT-2003 demonstrated clinically meaningful reductions in triglyceride levels and improvement in other cardio-metabolic risk factors, including glycated hemoglobin, or HbA1c, which is a measure of glucose levels over time, and LDL-C. We are currently conducting a Phase 2a clinical trial of CAT-2003 for the treatment of patients with MFC and rSHT and expect to report top-line data in the second quarter of 2015. We may seek to commercialize CAT-2003 through one or more collaborations.

Triglycerides are an important source of energy for the body. However, severely elevated levels of fasting triglycerides, defined as baseline triglycerides greater than 500 mg/dL, significantly increase the risk of acute pancreatitis, a severe inflammation of the pancreas that is associated with substantial morbidity and mortality. Diabetes is a common co-morbidity in severe hypertriglyceridemia, or SHTG, occurring in 24-37% of patients with SHTG while occurring in only 9% of the U.S. population.

Statins generally are prescribed to treat moderate hypertriglyceridemia, or fasting triglyceride levels below 500 mg/dL, while fibrates, omega-3 fatty acids and niacin are used to treat more severe hypertriglyceridemia. In the 12 months ended September 2014, combined U.S. sales of fibrates, prescription omega-3 fatty acids and prescription niacin were approximately $2.7 billion, according to IMS Health. However, an estimated 20% of patients being treated for SHTG still have severely elevated fasting triglycerides despite drug therapy and therefore are considered rSHTG patients. In addition, currently available treatments for SHTG have only a modest effect on postprandial, or post-meal, triglycerides. We believe there is an attractive market opportunity for an oral therapy that effectively reduces fasting and postprandial triglyceride levels in rSHTG patients, with neutral-to-positive effects on LDL-C and blood glucose.

CAT-2054

CAT-2054, similar to CAT-2003, is an orally administered SMART linker conjugate of EPA and nicotinic acid that we have designed to modulate the SREBP pathway. However, unlike CAT-2003, which we designed to be active in cells in the intestine, we designed CAT-2054 to be active in cells in the liver. By modulating the SREBP pathway in the liver, CAT-2054 may inhibit production of important cholesterol metabolism proteins, such as proprotein convertase subtilisin kexin 9, or PCSK9, 3-hydroxy-3-methyl-glutaryl-CoA reductase, or HMG-CoA reductase, and adenosine triphosphate citrate lyase, or ATP citrate lyase. We are developing CAT 2054 for the treatment of hypercholesterolemia, or elevated LDL-C levels, a disease that increases the risk of cardiovascular events. In January 2015, we initiated a Phase 1 clinical trial to assess the safety, tolerability and pharmacokinetics of CAT-2054 in healthy volunteers. If the results of this clinical trial are positive, we intend to initiate a Phase 2 clinical trial for the treatment of hypercholesterolemia in the fourth quarter of 2015. We intend to seek to commercialize CAT-2054 through one o more collaborations.

Hypercholesterolemia is a major risk factor for cardiovascular disease, a leading cause of mortality and morbidity in the United States. Hypercholesterolemia is a complex disease involving redundant biological pathways that are tightly regulated and have built-in feedback mechanisms. Current treatment guidelines recognize lowering of LDL-C as a primary target for reducing the risk of cardiovascular disease.

Several of the lipid-lowering therapies currently available or in development target proteins in the SREBP pathway to lower LDL-C. Despite the availability of these drugs, many patients are unable to achieve their LDL-C goals. A 2011 report of the Centers for Disease Control and Prevention estimated that, of the 34 million adults in the United States receiving treatment for high LDL-C, 11 million had uncontrolled LDL-C. Directly reducing active SREBP may have a significant benefit o LDL-C levels in circulation. SREBP modulators may work synergistically with inhibitors of proteins that are downstream of SREBP such as PCSK9, HMG-CoA reductase and ATP citrate lyase. In addition,

SREBP modulators may substantially reduce feedback mechanisms that are activated by other classes of LDL-C lowering drugs, such as statins and ezetimibe. We believe that CAT-2054, if approved, has the potential to be the first therapy to simultaneously modulate cholesterol synthesis, clearance and absorption.

CAT-4001

CAT-4001, our most advanced preclinical product candidate, is a SMART linker conjugate of monomethyl fumarate and DHA. CAT-4001 is a small molecule tha activates the Nrf2 pathway and inhibits activated NF-kB. Nrf2, or Nuclear factor erythroid-derived 2-like 2, is a gene transcription factor that controls the body's response to cellular stress and oxidative damage. CAT-4001 is in preclinical studies for the treatment of amyotrophic lateral sclerosis, or ALS, and Friedreich's ataxia, two rare degenerative diseases of the central nervous system in which the Nrf2 and NF-kB pathways have been implicated. We plan to conduct preclinical studies of CAT-4001 in 2015, and if the results of these preclinical studies are positive we intend to advance CAT-4001 into a Phase 1 clinical trial in 2016.

SMART Linker Technology Platform

We have developed our SMART linker technology platform to create molecules that simultaneously modulate multiple biological targets within one or more related disease pathways. The linkers used in our technology platform are small chemicals designed to join two separate bioactives into a single conjugate molecule. I systemic circulation, our SMART linker conjugates are stable and inactive, potentially reducing off-target toxicities and side-effects. The conjugates are designed to b cleaved by specific enzymes exclusively within cells in order to release the two bioactives inside the cells. By releasing the bioactive components of the conjugate molecule only inside cells, the SMART linker allows the bioactives to reach their targets more efficiently and have greater efficacy than if the bioactives were dosed independently or in combination. The stability of our SMART linker conjugates outside of cells and the release of the bioactives exclusively within cells are differentiating features of our SMART linker technology platform.

We believe our SMART linker technology platform has the potential to:

- enhance activity on disease pathways through modulation of multiple biological targets;
- improve efficacy by matching the pharmacokinetics and tissue distribution of the component bioactives; and
- improve safety and tolerability by releasing the component bioactives only within cells.

Our Strategy

Our objective is to apply our proprietary SMART linker technology platform to discover, develop and commercialize novel, bi-functional therapeutics, with an initial focus on orphan diseases. To achieve our goals, we are pursuing the following strategies:

- complete the development of CAT-1004 through registration for DMD;
- advance the development of our CAT-2000 series product candidates;
- continue to apply our SMART linker technology platform to expand our development pipeline; and
- maintain flexibility in commercializing and maximizing the value of our development programs.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before making an investment decision. These risks are discussed more fully in the "Risk Factors" section of this prospectus immediately following this prospectus summary. These risks include the following:

- We have incurred significant losses since inception and expect to incur significant and increasing losses for at least the next several years. We may never achieve or maintain profitability.
- We will need substantial additional funding. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our produc development programs or commercialization efforts.
- Our approach to the discovery and development of product candidates based on our SMART linker technology platform is unproven, and we do not know whether we will be able to develop any products of commercial value.
- We are dependent on the successful development and commercialization of our most advanced product candidates.
- Our SMART linker technology platform may fail to help us discover and develop additional potential product candidates.
- Clinical drug development involves a lengthy and expensive process with an uncertain outcome.
- We face substantial competition from other pharmaceutical and biotechnology companies, and our operating results may suffer if we fail to compete effectively.
- If we are unable to obtain and maintain sufficient patent protection for our product candidates, or if the scope of the patent protection is not sufficientl broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to commercialize our product candidates successfully may be adversely affected.

Our Corporate Information

We were incorporated under the laws of the State of Delaware on June 26, 2008 under the name Catabasis Pharmaceuticals, Inc. Our executive offices are locate at One Kendall Square, Bldg. 1400E, Suite B14202, Cambridge, Massachusetts 02139, and our telephone number is (617) 349-1971. Our website address is www.catabasis.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website addres in this prospectus solely as an inactive textual reference.

The trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners.

Implications of Being an Emerging Growth Company

As a company with less than $1 billion of revenue during our last fiscal year, we qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we may remain an emerging growth company for up to five years. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure and other requirements that are applicable to other public companies that are not emerging growth companies. In particular, in this prospectus, we have provided only two years of audited financial statements and have not included all of the executive compensation related information that would be required if we were not an emerging growth company. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold stock.

THE OFFERING

Common stock offered	shares
Common stock to be outstanding immediately following this offering	shares
Over-allotment option	shares
Use of proceeds	We intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, to fund our ongoing developmen of CAT-1004 and our CAT-2000 series product candidates, as well as for working capital and other general corporate purposes. See the "Us of Proceeds" section in this prospectus for a more complete description of the intended use of proceeds from this offering.
Risk factors	You should read the "Risk Factors" section of this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
Proposed NASDAQ Global Market symbol	"CATB"

The number of shares of our common stock to be outstanding after this offering is based on 6,337,920 shares of our common stock outstanding as of December 31, 2014 and 102,967,274 additional shares of our common stock issuable upon the automatic conversion of all outstanding shares of our preferred stock upon the closing of this offering.

The number of shares of our common stock to be outstanding after this offering excludes:

- 605,694 shares of our common stock issuable upon the exercise of warrants outstanding as of December 31, 2014, at a weighted-average exercise pric of $0.34 per share;
- 15,756,837 shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2014, at a weighted-average exercise price of $0.32 per share;
- 2,053,542 shares of our common stock available for future issuance as of December 31, 2014 under our amended and restated 2008 equity incentive plan; and
- additional shares of our common stock that will become available for future issuance in connection with this offering under our 2015 stock incentive plan.

Unless otherwise indicated, all information in this prospectus assumes:

- no exercise of the outstanding options or warrants described above;
- no exercise by the underwriters of their option to purchase up to additional shares of our common stock to cover over-allotments;
- the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 102,967,274 shares of our common stock upon the closir of this offering;
- the reclassification of our warrant liability to stockholders' (deficit) equity as a result of warrants to purchase preferred stock becoming warrants to purchase common stock upon the closing of this offering; and
- the restatement of our certificate of incorporation and the amendment and restatement of our bylaws upon the closing of this offering.

SUMMARY FINANCIAL INFORMATION

You should read the following summary financial data together with our financial statements and the related notes appearing at the end of this prospectus and th "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of this prospectus. We have derived the statement of operations data for the years ended December 31, 2012 and 2013 from our audited financial statements appearing at the end of this prospectus. The statement of operations data for the nine months ended September 30, 2013 and 2014 and the balance sheet data as of September 30, 2014 have beer derived from our unaudited financial statements appearing at the end of this prospectus and have been prepared on the same basis as the audited financial statements In the opinion of management, the unaudited financial data reflects all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentatio of the financial information as of and for the periods presented. Our historical results are not necessarily indicative of results that should be expected in any future period, and our results for any interim period are not necessarily indicative of results that should be expected for any full year.

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands, except share and per share data)			
Statement of Operations Data:				
Operating expenses:				
Research and development	$ 12,408	$ 13,994	$ 10,253	$ 11,361
General and administrative	3,265	4,125	2,962	4,443
Total operating expenses	15,673	18,119	13,215	15,804
Loss from operations	(15,673)	(18,119)	(13,215)	(15,804)
Other income (expense):				
Other income (expense), net	4	1	(2)	3
Interest expense	—	—	—	(57)
Total other income (expense), net	4	1	(2)	(54)
Net loss and comprehensive loss	$ (15,669)	$ (18,118)	$ (13,217)	$ (15,858)
Net loss per share—basic and diluted	$ (3.35)	$ (3.72)	$ (2.74)	$ (2.99)
Weighted-average number of common shares used in net loss per share—basic and diluted	4,682,198	4,870,362	4,820,036	5,312,210
Pro forma net loss per share—basic and diluted (unaudited)		$ (0.23)		$ (0.15)
Weighted-average number of common shares used in pro forma net loss per share—basic and diluted (unaudited)		78,511,025		108,279,484

See Note 2 in the notes to our financial statements appearing at the end of this prospectus for a description of the method used to calculate basic and diluted net loss per share and unaudited pro forma basic and diluted net loss per share.

The following table sets forth summary balance sheet data as of September 30, 2014:

- on an actual basis;
- on a pro forma basis to give effect to the conversion of all outstanding shares of our preferred stock into 102,967,274 shares of our common stock and the conversion of our outstanding warrants to purchase 157,844 shares of preferred stock into warrants to purchase 157,844 shares of common stock, resulting in the reclassification of our warrant liability to stockholders' (deficit) equity, upon the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to our issuance and sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	As of September 30, 2014		
	Actual	Pro Forma	Pro Forma As Adjusted
		(in thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 15,675	$ 15,675	$
Total assets	21,370	21,370	
Current liabilities	3,636	3,636	
Notes payable, net of discount	4,725	4,725	
Warrant liability	110	—	
Convertible preferred stock	80,146	—	
Accumulated deficit	(69,354)	(69,354)	
Total stockholders' (deficit) equity	(67,327)	12,929	

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you decide to invest in our common stock, you should consider carefully the risks described below, together with the other information contained in this prospectus, including our financial statements and the related notes appearing at the end of this prospectus. We believe the risks described below are the risks that are material to us as of the date of this prospectus. If any of the following risks actually occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment.

Risks Related to Our Financial Position and Need for Additional Capital

We have incurred significant losses since inception and expect to incur significant and increasing losses for at least the next several years. We may never achieve or maintain profitability.

We have incurred significant annual net operating losses in every year since our inception. We expect to continue to incur significant and increasing operating losses for at least the next several years. Our net losses were $15.7 million and $18.1 million for the years ended December 31, 2012 and 2013, respectively, and $15.9 million for the nine months ended September 30, 2014. As of September 30, 2014, we had an accumulated deficit of $69.4 million. We have not generated any revenues from product sales, have not completed the development of any product candidate and may never have a product candidate approved for commercialization. We have financed our operations to date primarily through private placements of our preferred stock and a debt financing, and have devoted substantially all of our financial resources and efforts to research and development, including preclinical studies and our clinical development programs. Our net losses may fluctuate significantly from quarter to quarter and year to year. Net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' (deficit) equity and working capital.

We anticipate that our expenses will increase substantially if and as we:

- continue to develop and conduct clinical trials with respect to our product candidates CAT-1004, CAT-2003 and CAT-2054, including a planned Phase 1/2 clinical trial of CAT-1004 that we plan to initiate in the first half of 2015 and an ongoing Phase 1 clinical trial of CAT-2054 that we initiated in January 2015;
- initiate and continue research and preclinical and clinical development efforts for our other product candidates;
- seek to identify and develop additional product candidates;
- seek regulatory and marketing approvals for our product candidates that successfully complete clinical trials, if any;
- establish sales, marketing, distribution and other commercial infrastructure in the future to commercialize various products for which we may obtain marketing approval, if any;
- require the manufacture of larger quantities of product candidates for clinical development and potentially commercialization;
- maintain, expand and protect our intellectual property portfolio;
- hire and retain additional personnel, such as clinical, quality control and scientific personnel;
- add operational, financial and management information systems and personnel, including personnel to support our product development and help us comply with our obligations as a public company; and
- add equipment and physical infrastructure to support our research and development programs.

Our ability to become and remain profitable depends on our ability to generate revenue. We do not expect to generate significant revenue unless and until we are, or any future collaborator is, able to obtain marketing approval for, and successfully commercialize, one or more of our product candidates. This will require our, or any of our future collaborators', success in a range of challenging activities, including completing clinical trials of our product candidates, obtaining marketing approval for these product candidates, manufacturing, marketing and selling those products for which we, or any of our future collaborators, may obtain marketing approval, satisfying any post-marketing requirements and obtaining reimbursement for our products from private insurance or government payors. Because of the uncertainties and risks associated with these activities, we are unable to accurately predict the timing and amount of increased expenses, and if or when we might achieve profitability. We and any future collaborators may never succeed in these activities and, even if we do, or any future collaborators does, we may never generate revenues that are large enough for us to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our pipeline of product candidates or continue our operations. A decline in the value of our company could cause you to lose all or part of your investment.

We have a limited operating history and no history of commercializing pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability.

We began operations in 2008. Our operations to date have been limited to financing and staffing our company and developing our technology and conducting preclinical research and early-stage clinical trials for our product candidates. We have not yet demonstrated an ability to successfully conduct pivotal clinical trials, obtain marketing approvals, manufacture a commercial scale product, or arrange for a third-party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Accordingly, you should consider our prospects in light of the costs, uncertainties, delays and difficulties frequently encountered by companies in the early stages of development, especially clinical-stage biopharmaceutical companies such as ours. Predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing pharmaceutical products.

We will need substantial additional funding. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is a very time-consuming, expensive and uncertain process that takes years to complete. We expect our expenses to increase in connection with our ongoing activities, particularly as we initiate new clinical trials of, initiate new research and preclinical development efforts for and seek marketing approval for, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we may incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution to the extent that such sales, marketing, manufacturing and distribution are not the responsibility of a future collaborator. Furthermore, following the completion of this offering, we expect to incur significant additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we may be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

We plan to use the net proceeds of this offering primarily to fund our ongoing research and development efforts. We will be required to expend significant funds in order to advance the development of CAT-1004 and our CAT-2000 series product candidates, as well as our other product candidates. In addition, while we may seek one or more collaborators for future development of our

product candidates, and, in particular, expect that we would conduct any large Phase 3 clinical trial of CAT-2054 for the treatment of hypercholesterolemia in collaboration with one or more partners that would pay most of the associated costs, we may not be able to enter into a collaboration for any of our product candidates on suitable terms or at all. In any event, the net proceeds of this offering and our existing cash and cash equivalents will not be sufficient to fund all of the efforts that we plan to undertake or to fund the completion of development of any of our product candidates. Accordingly, we will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources. With the exception of our credit facility with MidCap Financial SBIC, LP, or MidCap, and Square 1 Bank, or Square 1, we do not have any committed external source of funds.

Adequate additional financing may not be available to us on acceptable terms, or at all. Further, our ability to obtain additional debt financing may be limited by covenants we have made under our loan and security agreement with MidCap and Square 1, including our negative pledge with respect to intellectual property in favor of MidCap and Square 1, as well as our pledge to MidCap and Square 1 of substantially all of our assets, other than our intellectual property, as collateral. Our failure to raise capital as and when needed would have a negative impact on our financial condition and our ability to pursue our business strategy.

We believe that the net proceeds from this offering, together with our existing cash and cash equivalents as of September 30, 2014, will enable us to fund our operating expenses, debt service and capital expenditure requirements at least through 2016. Our estimate as to how long we expect the net proceeds from this offering, together with our existing cash and cash equivalents, to be able to fund our operations is based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Further, changing circumstances, some of which may be beyond our control, could cause us to consume capital significantly faster than we currently anticipate, and we may need to seek additional funds sooner than planned. Our future funding requirements, both short-term and long-term, will depend on many factors, including:

- the progress, timing, costs and results of clinical trials of, and research and preclinical development efforts for, our product candidates and potential product candidates, including current and future clinical trials;
- our ability to identify a collaborator for CAT-2054 and the terms and timing of any collaboration agreement that we may establish for the development and commercialization of CAT-2054;
- our ability to enter into and the terms and timing of any additional collaborations, licensing or other arrangements that we may establish;
- the number and characteristics of future product candidates that we pursue and their development requirements;
- the outcome, timing and costs of seeking regulatory approvals;
- the costs of commercialization activities for any of our product candidates that receive marketing approval to the extent such costs are not the responsibility of any future collaborators, including the costs and timing of establishing product sales, marketing, distribution and manufacturing capabilities;
- subject to receipt of marketing approval, revenue, if any, received from commercial sales of our product candidates;
- our headcount growth and associated costs as we expand our research and development and establish a commercial infrastructure;

- the costs of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights and defending against intellectual property related claims; and

- the costs of operating as a public company.

Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering, restrict our operations or require us to relinquish rights to our technologies or product candidates.

We expect that significant additional capital will be needed in the future to continue our planned operations. To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, our existing stockholders' ownership interest may be substantially diluted, and the terms of these securities could include liquidation or other preferences and anti-dilution protections that could adversely affect your rights as a common stockholder. Additional debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures, creating liens, redeeming stock or declaring dividends, that could adversely impact our ability to conduct our business. For example, our debt facility with MidCap and Square 1 contains restrictive covenants that, among other things and subject to certain exceptions, prohibit us from transferring any of our material assets, exclusively licensing our intellectual property (subject to certain exceptions), merging with or acquiring another entity, entering into a transaction that would result in a change of control, incurring additional indebtedness, creating any lien on our property, making investments in third parties or redeeming stock or paying dividends. Future debt securities or other financing arrangements could contain similar or more restrictive negative covenants. In addition, securing additional financing could require a substantial amount of time and attention from our management and may divert a disproportionate amount of their attention away from day-to-day activities, which may adversely affect our management's ability to oversee the development of our product candidates.

If we raise additional funds through collaborations or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our existing and any future indebtedness could adversely affect our ability to operate our business.

As of September 30, 2014, we had $5.0 million of outstanding borrowings under our loan and security agreement with MidCap and Square 1. We currently make monthly interest payments and, beginning in October 2015, will be required to repay principal and interest on these borrowings in monthly installments through October 2018. Subject to the restrictions in our existing credit facility with MidCap and Square 1, we could in the future incur additional indebtedness beyond our borrowings from MidCap and Square 1.

Our outstanding indebtedness, including any additional indebtedness beyond our borrowings from MidCap and Square 1, combined with our other financial obligations and contractual commitments could have significant adverse consequences, including:

- requiring us to dedicate a portion of our cash resources to the payment of interest and principal, reducing money available to fund working capital, capital expenditures, product development and other general corporate purposes;

- increasing our vulnerability to adverse changes in general economic, industry and market conditions;
- subjecting us to restrictive covenants that may reduce our ability to take certain corporate actions or obtain further debt or equity financing;
- limiting our flexibility in planning for, or reacting to, changes in our business and the industry in which we compete; and
- placing us at a competitive disadvantage compared to our competitors that have less debt or better debt servicing options.

We intend to satisfy our current and future debt service obligations with our existing cash and cash equivalents and investments. However, we may not have sufficient funds, and may be unable to arrange for additional financing, to pay the amounts due under our existing debt instruments. Failure to make payments or comply with other covenants under our existing debt instruments could result in an event of default and acceleration of amounts due. Under our loan and security agreement with MidCap and Square 1, the occurrence of an event that would reasonably be expected to have a material adverse effect on our business, operations, assets or condition is an event of default. If an event of default occurs and the lenders accelerate the amounts due, we may not be able to make accelerated payments, and the lenders could seek to enforce security interests in the collateral securing such indebtedness, which includes substantially all of our assets other than our intellectual property. In addition, the covenants under our existing debt instruments, the pledge of our assets as collateral and the negative pledge with respect to our intellectual property could limit our ability to obtain additional debt financing.

Risks Related to the Discovery, Development and Commercialization of Our Product Candidates

Our approach to the discovery and development of product candidates based on our SMART linker technology platform is unproven, and we do not know whether we will be able to develop any products of commercial value.

We are focused on discovering and developing novel bi-functional small molecule drugs by applying our SMART linker technology platform. While we believe that applying our SMART linker technology platform may potentially enable drug research and clinical development that is more efficient than conventional small molecule drug research and development, this approach is unproven. We have not yet succeeded and may never succeed in demonstrating efficacy and safety for any of our product candidates in later stage clinical trials or in obtaining marketing approval thereafter. For example, although we have discovered and evaluated numerous compounds using our SMART linker technology platform, we have not yet advanced a compound into Phase 3 clinical development and no product created using the SMART linker technology platform has ever been approved for sale.

We are dependent on the success of our most advanced product candidate, CAT-1004, and our CAT-2000 series product candidates. If we are unable to complete the clinical development of, obtain marketing approval for or successfully commercialize at least one of these product candidates, either alone or with a collaborator, or if we experience significant delays in doing so, our business could be substantially harmed.

We currently have no products approved for sale and are investing a significant portion of our efforts and financial resources in the development of CAT-1004 for the treatment of Duchenne muscular dystrophy, or DMD, and our CAT-2000 series product candidates for the treatment of serious lipid disorders. Our prospects are substantially dependent on our ability, or that of any future collaborator, to develop, obtain marketing approval for and successfully commercialize at least one of these product candidates.

The success of CAT-1004 and our CAT-2000 series product candidates will depend on several factors, including the following:

- successful completion of our ongoing clinical trials;
- initiation and successful enrollment and completion of additional clinical trials;
- safety, tolerability and efficacy profiles that are satisfactory to the U.S. Food and Drug Administration, or FDA, or any comparable foreign regulatory authority for marketing approval;
- timely receipt of marketing approvals from applicable regulatory authorities;
- the performance of our future collaborators, if any;
- the extent of any required post-marketing approval commitments to applicable regulatory authorities;
- establishment of supply arrangements with third-party raw materials suppliers and manufacturers;
- establishment of arrangements with third-party manufacturers to obtain finished drug products that are appropriately packaged for sale;
- obtaining and maintaining patent, trade secret protection and regulatory exclusivity, both in the United States and internationally;
- protection of our rights in our intellectual property portfolio;
- successful launch of commercial sales following any marketing approval;
- a continued acceptable safety profile following any marketing approval;
- commercial acceptance by patients, the medical community and third-party payors following any marketing approval; and
- our ability to compete with other therapies, including, in the case of CAT-1004, therapies targeting dystrophin, utrophin and myostatin and inflammatory mediators.

Many of these factors are beyond our control, including clinical development, the regulatory submission process, potential threats to our intellectual property rights and the manufacturing, marketing and sales efforts of any future collaborator. If we are unable to develop, receive marketing approval for and successfully commercialize at least one of CAT-1004 or a product candidate in the CAT-2000 series, on our own or with any future collaborator, or experience delays as a result of any of these factors or otherwise, our business could be substantially harmed.

Our SMART linker technology platform may fail to help us discover and develop additional potential product candidates.

A significant portion of the research that we are conducting involves the development of new compounds using our SMART linker technology platform. The drug discovery that we are conducting using our SMART linker technology platform may not be successful in creating compounds that have commercial value or therapeutic utility. Our SMART linker technology platform may initially show promise in identifying potential product candidates, yet fail to yield viable product candidates for clinical development or commercialization for a number of reasons, including:

- compounds created through our SMART linker technology platform may not demonstrate improved efficacy, safety or tolerability;

- potential product candidates may, on further study, be shown to have harmful side effects or other characteristics that indicate that they are unlikely to receive marketing approval and achieve market acceptance;
- competitors may develop alternative therapies that render our potential product candidates non-competitive or less attractive; or
- a potential product candidate may not be capable of being produced at an acceptable cost.

Our research programs to identify new product candidates will require substantial technical, financial and human resources, and we may be unsuccessful in our efforts to identify new product candidates. If we are unable to identify suitable additional compounds for preclinical and clinical development, our ability to develop product candidates and obtain product revenues in future periods could be compromised, which could result in significant harm to our financial position and adversely impact our stock price.

We have never obtained marketing approval for a product candidate and we may be unable to obtain, or may be delayed in obtaining, marketing approval for any of our product candidates.

We have never obtained marketing approval for a product candidate. It is possible that the FDA may refuse to accept for substantive review any new drug applications, or NDAs, that we submit for our product candidates or may conclude after review of our data that our application is insufficient to obtain marketing approval of our product candidates. If the FDA does not accept or approve our NDAs for either of our most advanced product candidates, it may require that we conduct additional clinical, nonclinical or manufacturing validation studies and submit that data before it will reconsider our applications. Depending on the extent of these or any other FDA-required studies, approval of any NDA or application that we submit may be delayed by several years, or may require us to expend more resources than we have available. It is also possible that additional studies, if performed and completed, may not be considered sufficient by the FDA to approve our NDAs.

Any delay in obtaining, or an inability to obtain, marketing approvals would prevent us from commercializing our product candidates, generating revenues and achieving and sustaining profitability. If any of these outcomes occur, we may be forced to abandon our development efforts for our product candidates, which could significantly harm our business.

Results of preclinical studies and early clinical trials may not be predictive of results of future clinical trials.

The outcome of preclinical studies and early clinical trials may not be predictive of the success of later clinical trials, and interim results of clinical trials do not necessarily predict success in future clinical trials. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in earlier development, and we cannot be certain that we will not face similar setbacks. The design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. We have limited experience in designing clinical trials and may be unable to design and execute a clinical trial to support marketing approval. In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval for the product candidates. Even if we, or any future collaborators, believe that the results of clinical trials for our product candidates warrant marketing approval, the FDA or comparable foreign regulatory authorities may disagree and may not grant marketing approval of our product candidates.

In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial

procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the dosing regimen and other clinical trial protocols and the rate of dropout among clinical trial participants. If we fail to receive positive results in clinical trials of our product candidates, the development timeline and regulatory approval and commercialization prospects for our most advanced product candidates, and, correspondingly, our business and financial prospects would be negatively impacted.

Because we are developing CAT-1004 for the treatment of DMD, a disease for which regulatory authorities have not issued definitive guidance as to how to measure and demonstrate efficacy, there is increased risk that the outcome of our clinical trials will not be satisfactory for marketing approval.

There is currently no approved therapy for DMD in the United States. In addition, there has been limited historical clinical trial experience for the development of drugs to treat the underlying cause of DMD. As a result, the design and conduct of clinical trials for this disease, particularly for drugs to address the underlying cause of this disease, is subject to increased risk. In particular, regulatory authorities in the United States and European Union have not issued definitive guidance as to how to measure and demonstrate efficacy. We anticipate that the primary endpoint in our Phase 1/2 clinical trial of CAT-1004 for the treatment of DMD will be changes in magnetic resonance imaging, or MRI, of leg muscles as a biomarker for inflammation, which is known to increase with age but is observed to decrease with initiation of steroid therapy. We intend to include as exploratory endpoints the timed function tests best suited for this age group, specifically the 10 meter walk/run, time to stand and 4-stair climb tests. However, due to the age and development stage of the patients we intend to enroll in this clinical trial, these endpoints may not be sufficiently sensitive to demonstrate efficacy over the period of the trial.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we intend to focus on developing product candidates for specific indications that we identify as most likely to succeed, in terms of both their potential for marketing approval and commercialization. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that may prove to have greater commercial potential.

Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product candidates. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to the product candidate.

Clinical drug development involves a lengthy and expensive process with an uncertain outcome.

Clinical testing is expensive, time-consuming and uncertain as to outcome. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule, or at all. The clinical development of our product candidates is susceptible to the risk of failure at any stage of drug development, including failure to demonstrate efficacy in a clinical trial or across a broad population of patients, the occurrence of adverse events that are severe or medically or commercially unacceptable, failure to comply with protocols or applicable regulatory requirements and determination by the FDA or any comparable foreign regulatory authority that a product candidate may not continue development or is not approvable. For example, our IND for CAT-2003 was placed on partial clinical hold by the

FDA in November 2012 because of the need for additional nonclinical work to support potential expansion of dosing and duration of our proposed Phase 1 multiple ascending dose trial. Although the partial clinical hold was removed in July 2013, it is possible that any of our development programs may be placed on full or partial clinical hold by regulatory authorities at any point, which would delay and possibly prevent further development of our product candidates. It is possible that even if one or more of our product candidates has a beneficial effect, that effect will not be detected during clinical evaluation as a result of one or more of a variety of factors, including the size, duration, design, measurements, conduct or analysis of our clinical trials. Conversely, as a result of the same factors, our clinical trials may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any. Similarly, in our clinical trials we may fail to detect toxicity of or intolerability caused by our product candidates, or mistakenly believe that our product candidates are toxic or not well tolerated when that is not in fact the case.

In addition to the risk of failure inherent in drug development, certain of the compounds that we are developing and may develop in the future using our SMART linker technology platform may be particularly susceptible to failure to the extent they are based on compounds that others have previously studied or tested, but did not progress in development due to safety, tolerability or efficacy concerns or otherwise. Our failure to successfully complete clinical trials of our product candidates and to demonstrate the efficacy and safety necessary to obtain regulatory approval to market any of our product candidates would significantly harm our business.

If clinical trials of our product candidates fail to satisfactorily demonstrate safety and efficacy to the FDA and other comparable foreign regulators, we, or any future collaborators, may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of these product candidates.

We, and any future collaborators, are not permitted to commercialize, market, promote or sell any product candidate in the United States without obtaining marketing approval from the FDA. Comparable foreign regulatory authorities, such as the European Medicines Agency, or the EMA, impose similar restrictions. We, and any future collaborators, may never receive such approvals. We, and any future collaborators, must complete extensive preclinical development and clinical trials to demonstrate the safety and efficacy of our product candidates in humans before we, or they, will be able to obtain these approvals.

Clinical testing is expensive, difficult to design and implement, can take many years to complete and is inherently uncertain as to outcome. We have not previously submitted an NDA to the FDA or similar drug approval filings to comparable foreign regulatory authorities for any of our product candidates. Any inability to complete preclinical and clinical development successfully could result in additional costs to us, or any future collaborators, and impair our ability to generate revenues from product sales, regulatory and commercialization milestones and royalties. Moreover, if (1) we, or any future collaborators, are required to conduct additional clinical trials or other testing of our product candidates beyond the trials and testing that we, or they contemplate, (2) we, or any future collaborators, are unable to successfully complete clinical trials of our product candidates or other testing, (3) the results of these trials or tests are unfavorable, uncertain or are only modestly favorable, or (4) there are unacceptable safety concerns associated with our product candidates, we, or any future collaborators, may:

- be delayed in obtaining marketing approval for our product candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;

- obtain approval with labeling that includes significant use or distribution restrictions or significant safety warnings, including boxed warnings;
- be subject to additional post-marketing testing or other requirements; or
- be required to remove the product from the market after obtaining marketing approval.

Adverse events or undesirable side effects caused by, or other unexpected properties of, any of our product candidates may be identified during development that could delay or prevent their marketing approval or limit their use.

Adverse events or undesirable side effects caused by, or other unexpected properties of, our product candidates could cause us, any future collaborators, an institutional review board or regulatory authorities to interrupt, delay or halt clinical trials of one or more of our product candidates and could result in a more restrictive label or the delay or denial of marketing approval by the FDA or comparable foreign regulatory authorities. For example, in our initial clinical trials of CAT-2003 we observed gastrointestinal tolerability issues at high doses as well as with long exposure times. As a result, we reformulated CAT-2003 in a coated capsule and conducted an additional Phase 1 clinical trial to evaluate tolerability. We are continuing to pursue clinical development with that formulation, but incidence of gastrointestinal adverse events could still occur in our ongoing or future clinical trials or following any receipt of marketing approval. If CAT-2003 or any of our other product candidates is associated with adverse events or undesirable side effects or has properties that are unexpected, we, or any future collaborators, may need to abandon development or limit development of that product candidate to certain uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many compounds that initially showed promise in clinical or earlier stage testing have later been found to cause undesirable or unexpected side effects that prevented further development of the compound.

If we, or any future collaborators, experience any of a number of possible unforeseen events in connection with clinical trials of our product candidates, potential marketing approval or commercialization of our product candidates could be delayed or prevented.

We, or any future collaborators, may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent marketing approval or commercialization of our product candidates, including:

- clinical trials of our product candidates may produce unfavorable or inconclusive results;
- we, or any future collaborators, may decide, or regulators may require us or them, to conduct additional clinical trials or abandon product development programs;
- the number of patients required for clinical trials of our product candidates may be larger than we, or any future collaborators, anticipate, patient enrollment in these clinical trials may be slower than we, or any future collaborators, anticipate or participants may drop out of these clinical trials at a higher rate than we, or any future collaborators, anticipate;
- the cost of planned clinical trials of our product candidates may be greater than we anticipate;
- our third-party contractors or those of any future collaborators, including those manufacturing our product candidates or components or ingredients thereof or conducting clinical trials on our behalf or on behalf of any future collaborators, may fail to comply with regulatory requirements or meet their contractual obligations to us or any future collaborators in a timely manner or at all;

- regulators or institutional review boards may not authorize us, any future collaborators or our or their investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;

- we, or any future collaborators, may have delays in reaching or fail to reach agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;

- patients that enroll in a clinical trial may misrepresent their eligibility to do so or may otherwise not comply with the clinical trial protocol, resulting in the need to drop the patients from the clinical trial, increase the needed enrollment size for the clinical trial or extend the clinical trial's duration;

- we, or any future collaborators, may have to delay, suspend or terminate clinical trials of our product candidates for various reasons, including a finding that the participants are being exposed to unacceptable health risks, undesirable side effects or other unexpected characteristics of the product candidate, such as the delay we experienced in one of our Phase 2 clinical trials of CAT-2003 while we reformulated CAT-2003 in a coated capsule and evaluated its tolerability;

- regulators or institutional review boards may require that we, or any future collaborators, or our or their investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or their standards of conduct, a finding that the participants are being exposed to unacceptable health risks, undesirable side effects or other unexpected characteristics of the product candidate or findings of undesirable effects caused by a chemically or mechanistically similar drug or drug candidate;

- the FDA or comparable foreign regulatory authorities may disagree with our, or any future collaborators', clinical trial designs or our or their interpretation of data from preclinical studies and clinical trials;

- the FDA or comparable foreign regulatory authorities may fail to approve or subsequently find fault with the manufacturing processes or facilities of third-party manufacturers with which we, or any future collaborators, enter into agreements for clinical and commercial supplies;

- the supply or quality of raw materials or manufactured product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient, inadequate or not available at an acceptable cost, or we may experience interruptions in supply; and

- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient to obtain marketing approval.

Product development costs for us, or any future collaborators, will increase if we, or they, experience delays in testing or pursuing marketing approvals and we, or they, may be required to obtain additional funds to complete clinical trials and prepare for possible commercialization of our product candidates. We do not know whether any preclinical tests or clinical trials will begin as planned, will need to be restructured, or will be completed on schedule or at all. Significant preclinical or clinical trial delays also could shorten any periods during which we, or any future collaborators, may have the exclusive right to commercialize our product candidates or allow our competitors, or the competitors of any future collaborators, to bring products to market before we, or any future collaborators, do and impair our ability, or the ability of any future collaborators, to successfully commercialize our product candidates and may harm our business and results of operations. In addition, many of the factors that lead to clinical trial delays may ultimately lead to the denial of marketing approval of any of our product candidates.

If we, or any future collaborators, experience delays or difficulties in the enrollment of patients in clinical trials, our or their receipt of necessary regulatory approvals could be delayed or prevented.

We, or any future collaborators, may not be able to initiate or continue clinical trials for any of our product candidates if we, or they, are unable to locate and enroll a sufficient number of eligible patients to participate in clinical trials as required by the FDA or comparable foreign regulatory authorities, such as the EMA. Patient enrollment is a significant factor in the timing of clinical trials, and is affected by many factors, including:

- the size and nature of the patient population;
- the severity of the disease under investigation;
- the proximity of patients to clinical sites;
- the eligibility criteria for the trial;
- the design of the clinical trial;
- efforts to facilitate timely enrollment;
- competing clinical trials; and
- clinicians' and patients' perceptions as to the potential advantages and risks of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating.

In particular, the successful completion of our clinical development program for CAT-1004 for the treatment of DMD is dependent upon our ability to enroll a sufficient number of patients with DMD. DMD is a rare disease with a small patient population. Further, there are only a limited number of specialist physicians that regularly treat patients with DMD and major clinical centers that support DMD treatment are concentrated in a few geographic regions. In addition, other companies are conducting clinical trials and have announced plans for future clinical trials that are seeking, or are likely to seek, to enroll patients with DMD and patients are generally only able to enroll in a single trial at a time. The small population of patients, competition for these patients and the limited trial sites may make it difficult for us to enroll enough patients to complete our clinical trials for CAT-1004 in a timely and cost-effective manner.

The clinical trials that we conduct may also have inclusion criteria that further limit the population of patients that we are able to enroll. For example, for the Phase 1/2 clinical trial of CAT-1004 that we expect to initiate in the first half of 2015, we plan to enroll only ambulatory boys between ages four and seven who have not used steroids for at least six months prior to the trial. These inclusion criteria could present challenges to enrollment because steroid therapy for DMD is often initiated in this age range.

Our inability, or the inability of any future collaborators, to enroll a sufficient number of patients for our, or their, clinical trials could result in significant delays or may require us or them to abandon one or more clinical trials altogether. Enrollment delays in our, or their, clinical trials may result in increased development costs for our product candidates, delay or halt the development of and approval processes for our product candidates and jeopardize our, or any future collaborators', ability to commence sales of and generate revenues from our product candidates, which could cause the value of our company to decline.

If any of our product candidates receives marketing approval and we, or others, later discover that the drug is less effective than previously believed or causes undesirable side effects that were not previously identified, our ability, or that of any future collaborators, to market the drug could be compromised.

Clinical trials of our product candidates are conducted in carefully defined subsets of patients who have agreed to enter into clinical trials. Consequently, it is possible that our clinical trials, or those of any future collaborator, may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any, or alternatively fail to identify undesirable side effects. If, following approval of a product candidate, we, or others, discover that the drug is less effective than previously believed or causes undesirable side effects that were not previously identified, any of the following adverse events could occur:

- regulatory authorities may withdraw their approval of the drug or seize the drug;
- we, or any future collaborators, may be required to recall the drug, change the way the drug is administered or conduct additional clinical trials;
- additional restrictions may be imposed on the marketing of, or the manufacturing processes for, the particular drug;
- we may be subject to fines, injunctions or the imposition of civil or criminal penalties;
- regulatory authorities may require the addition of labeling statements, such as a "black box" warning or a contraindication;
- we, or any future collaborators, may be required to create a Medication Guide outlining the risks of the previously unidentified side effects for distribution to patients;
- we, or any future collaborators, could be sued and held liable for harm caused to patients;
- the drug may become less competitive; and
- our reputation may suffer.

Any of these events could have a material and adverse effect on our operations and business and could adversely impact our stock price.

Even if one of our product candidates receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success and the market opportunity for the product candidate may be smaller than we estimate.

We have never commercialized a product. Even if one of our product candidates is approved by the appropriate regulatory authorities for marketing and sale, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. For example, physicians are often reluctant to switch their patients from existing therapies even when new and potentially more effective or convenient treatments enter the market. Further, patients often acclimate to the therapy that they are currently taking and do not want to switch unless their physicians recommend switching products or they are required to switch therapies due to lack of reimbursement for existing therapies.

Efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may not be successful. If any of our product candidates is approved but does not achieve an adequate level of market acceptance, we may not generate significant revenues and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of the product;

- the potential advantages of the product compared to alternative treatments;
- the prevalence and severity of any side effects;
- the clinical indications for which the product is approved;
- whether the product is designated under physician treatment guidelines as a first-line therapy or as a second- or third-line therapy;
- limitations or warnings, including distribution or use restrictions, contained in the product's approved labeling;
- our ability, or the ability of any future collaborators, to offer the product for sale at competitive prices;
- the product's convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try, and of physicians to prescribe, the product;
- the strength of sales, marketing and distribution support;
- the approval of other new products for the same indications;
- changes in the standard of care for the targeted indications for the product;
- the timing of market introduction of our approved products as well as competitive products;
- availability and amount of reimbursement from government payors, managed care plans and other third-party payors;
- adverse publicity about the product or favorable publicity about competitive products; and
- potential product liability claims.

The potential market opportunities for our product candidates are difficult to estimate precisely. Our estimates of the potential market opportunities are predicated on many assumptions, including industry knowledge and publications, third-party research reports and other surveys. While we believe that our internal assumptions are reasonable, these assumptions involve the exercise of significant judgment on the part of our management, are inherently uncertain and the reasonableness of these assumptions has not been assessed by an independent source. If any of the assumptions proves to be inaccurate, the actual markets for our product candidates could be smaller than our estimates of the potential market opportunities.

If we are unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution arrangements with third parties, we may not be successful in commercializing any product candidates that we develop if and when those product candidates are approved.

We do not have a sales, marketing or distribution infrastructure and have no experience in the sale, marketing or distribution of pharmaceutical products. To achieve commercial success for any approved product, we must either develop a sales and marketing organization or outsource these functions to third parties. We plan to use a combination of focused in-house sales and marketing capabilities and third-party collaboration, licensing and distribution arrangements to sell any of our products that receive marketing approval.

We generally plan to seek to retain full commercialization rights in the United States and Canada for products that we can commercialize with a specialized sales force and to retain co-promotion or similar rights in the United States and Canada when feasible in indications requiring a larger commercial infrastructure. The development of sales, marketing and distribution capabilities will

require substantial resources, will be time-consuming and could delay any product launch. If the commercial launch of a product for which we recruit a sales force and establish marketing and distribution capabilities is delayed or does not occur for any reason, we could have prematurely or unnecessarily incurred these commercialization costs. This may be costly, and our investment could be lost if we cannot retain or reposition our sales and marketing personnel. In addition, we may not be able to hire or retain a sales force in the United States or Canada that is sufficient in size or has adequate expertise in the medical markets that we plan to target. If we are unable to establish or retain a sales force and marketing and distribution capabilities, our operating results may be adversely affected. If a potential partner has development or commercialization expertise that we believe is particularly relevant to one of our products, then we may seek to collaborate with that potential partner even if we believe we could otherwise develop and commercialize the product independently.

We plan to collaborate with third parties for commercialization in the United States and Canada of any products that require a large sales, marketing and product distribution infrastructure. We also plan to commercialize our product candidates outside the United States and Canada through collaboration, licensing and distribution arrangements with third parties. As a result of entering into arrangements with third parties to perform sales, marketing and distribution services, our product revenues or the profitability of these product revenues may be lower, perhaps substantially lower, than if we were to directly market and sell products in those markets. Furthermore, we may be unsuccessful in entering into the necessary arrangements with third parties or may be unable to do so on terms that are favorable to us. In addition, we may have little or no control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively.

If we do not establish sales, marketing and distribution capabilities, either on our own or in collaboration with third parties, we will not be successful in commercializing any of our product candidates that receive marketing approval.

We face substantial competition from other pharmaceutical and biotechnology companies, and our operating results may suffer if we fail to compete effectively.

The development and commercialization of new drug products is highly competitive. We expect that we, and any future collaborators, will face significant competition from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide with respect to any of our product candidates that we, or they, may seek to develop or commercialize in the future. Specifically, there are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of product candidates for the treatment of the key indications of our most advanced programs, including DMD, severe hypertriglyceridemia and hypercholesterolemia.

We are initially developing CAT-1004 for the treatment of DMD. While there are currently no therapies approved for the treatment of DMD in the United States, corticosteroid therapy is often prescribed to treat the inflammation underlying DMD and to delay loss of ambulation. In addition, a number of companies are developing therapies to treat DMD that are already on the market in Europe or are in the process of registration or late stage clinical development, including Eli Lilly, Prosensa (currently being acquired by Biomarin Pharmaceuticals), PTC Therapeutics, Santhera Pharmaceuticals and Sarepta Therapeutics.

We are initially developing CAT-2003 for the treatment of multifactorial chylomicronemia syndrome, or MFC, and refractory severe hypertriglyceridemia, or rSHTG. Several pharmaceutical companies have product candidates in clinical development for severe hypertriglyceridemia which, if approved, would potentially compete with CAT-2003 in MFC or rSHTG. Companies with potentially

competitive product candidates in Phase 2 or 3 clinical development include Arisaph Pharmaceuticals, Isis Pharmaceuticals, Novartis, Pronova BioPharma, Sancilio & Company and Trygg Pharma.

Our competitors may succeed in developing, acquiring or licensing technologies and drug products that are more effective, have fewer or more tolerable side effects or are less costly than any product candidates that we are currently developing or that we may develop, which could render our product candidates obsolete and noncompetitive.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we, or any future collaborators, may develop. Our competitors also may obtain FDA or other marketing approval for their products before we, or any future collaborators, are able to obtain approval for ours, which could result in our competitors establishing a strong market position before we, or any future collaborators, are able to enter the market.

Many of our existing and potential future competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining marketing approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

If the FDA or comparable foreign regulatory authorities approve generic versions of any of our products that receive marketing approval, or such authorities do not grant our products appropriate periods of data exclusivity before approving generic versions of our products, the sales of our products could be adversely affected.

Once an NDA is approved, the product covered thereby becomes a "reference-listed drug" in the FDA's publication, "Approved Drug Products with Therapeutic Equivalence Evaluations." Manufacturers may seek approval of generic versions of reference-listed drugs through submission of abbreviated new drug applications, or ANDAs, in the United States. In support of an ANDA, a generic manufacturer need not conduct clinical studies. Rather, the applicant generally must show that its product has the same active ingredient(s), dosage form, strength, route of administration and conditions of use or labeling as the reference-listed drug and that the generic version is bioequivalent to the reference-listed drug, meaning it is absorbed in the body at the same rate and to the same extent. Generic products may be significantly less costly to bring to market than the reference-listed drug and companies that produce generic products are generally able to offer them at lower prices. Thus, following the introduction of a generic drug, a significant percentage of the sales of any branded product or reference-listed drug may be typically lost to the generic product.

The FDA may not approve an ANDA for a generic product until any applicable period of non-patent exclusivity for the reference-listed drug has expired. The Federal Food, Drug, and Cosmetic Act, or FDCA, provides a period of five years of non-patent exclusivity for a new drug containing a new chemical entity, or NCE. Specifically, in cases where such exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification that a patent covering the reference-listed drug is either invalid or will not be infringed by the generic product, in which case the applicant may submit its application four years following approval of the reference-listed drug. It is unclear whether the FDA will treat the active ingredients in our product candidates as NCEs and, therefore, afford them five years of NCE data

exclusivity if they are approved. If any product we develop does not receive five years of NCE exclusivity, the FDA may approve generic versions of such product three years after its date of approval. Manufacturers may seek to launch these generic products following the expiration of the applicable marketing exclusivity period, even if we still have patent protection for our product.

Competition that our products may face from generic versions of our products could materially and adversely impact our future revenue, profitability and cash flows and substantially limit our ability to obtain a return on the investments we have made in those product candidates.

Even if we, or any future collaborators, are able to commercialize any product candidate that we, or they, develop, the product may become subject to unfavorable pricing regulations, third-party payor reimbursement practices or healthcare reform initiatives that could harm our business.

The commercial success of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by third-party payors, including government health administration authorities and private health coverage insurers. If coverage and reimbursement is not available, or reimbursement is available only to limited levels, we, or any future collaborators, may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us, or any future collaborators, to establish or maintain pricing sufficient to realize a sufficient return on our or their investments. In the United States, no uniform policy of coverage and reimbursement for products exists among third-party payors and coverage and reimbursement for products can differ significantly from payor to payor.

There is significant uncertainty related to third-party payor coverage and reimbursement of newly approved drugs. Marketing approvals, pricing and reimbursement for new drug products vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we, or any future collaborators, might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay commercial launch of the product, possibly for lengthy time periods, which may negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability or the ability of any future collaborators to recoup our or their investment in one or more product candidates, even if our product candidates obtain marketing approval.

Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Therefore, our ability, and the ability of any future collaborators, to commercialize any of our product candidates will depend in part on the extent to which coverage and reimbursement for these products and related treatments will be available from third-party payors. Third-party payors decide which medications they will cover and establish reimbursement levels. The healthcare industry is acutely focused on cost containment, both in the United States and elsewhere. Government authorities and other third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications, which could affect our ability or that of any future collaborators to sell our product candidates profitably. These payors may not view our products, if any, as cost-effective, and coverage and reimbursement may not be available to our customers, or those of any future collaborators, or may not be sufficient to allow our products, if any, to be marketed on a competitive basis. Cost-control initiatives could cause us, or any future collaborators, to decrease the price we, or they, might establish for products, which could result in lower than anticipated product revenues. If the prices for our products, if any, decrease or if governmental and other third-party payors do not provide coverage or adequate reimbursement, our prospects for revenue and profitability will suffer.

There may also be delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the indications for which the drug is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for reimbursement does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Reimbursement rates may vary, by way of example, according to the use of the drug and the clinical setting in which it is used. Reimbursement rates may also be based on reimbursement levels already set for lower cost drugs or may be incorporated into existing payments for other services.

In addition, increasingly, third-party payors are requiring higher levels of evidence of the benefits and clinical outcomes of new technologies and are challenging the prices charged. We cannot be sure that coverage will be available for any product candidate that we, or any future collaborator, commercialize and, if available, that the reimbursement rates will be adequate. Further, the net reimbursement for drug products may be subject to additional reductions if there are changes to laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. An inability to promptly obtain coverage and adequate payment rates from both government-funded and private payors for any of our product candidates for which we, or any future collaborator, obtain marketing approval could significantly harm our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

Product liability lawsuits against us could divert our resources, cause us to incur substantial liabilities and limit commercialization of any products that we may develop.

We face an inherent risk of product liability claims as a result of the clinical testing of our product candidates despite obtaining appropriate informed consents from our clinical trial participants. We will face an even greater risk if we or any future collaborators commercially sell any product that we may or they may develop. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during clinical testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability or a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our product candidates or products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend resulting litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and
- the inability to commercialize any products that we may develop.

Although we maintain general liability insurance of $2.0 million in the aggregate and clinical trial liability insurance of $3.0 million in the aggregate, this insurance may not fully cover potential liabilities that we may incur. The cost of any product liability litigation or other proceeding, even if resolved in our favor, could be substantial. We will need to increase our insurance coverage if and when we begin selling any product candidate that receives marketing approval. In addition, insurance coverage is

becoming increasingly expensive. If we are unable to obtain or maintain sufficient insurance coverage at an acceptable cost or to otherwise protect against potential product liability claims, it could prevent or inhibit the development and commercial production and sale of our product candidates, which could adversely affect our business, financial condition, results of operations and prospects.

Risks Related to Our Dependence on Third Parties

We expect to seek to establish collaborations and, if we are not able to establish them on commercially reasonable terms, we may have to alter our development and commercialization plans.

Our drug development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. We expect to seek one or more collaborators for the development and commercialization of one or more of our product candidates. For example, conducting pivotal Phase 3 clinical trials of CAT-2054 in patients with hypercholesterolemia will likely involve significant cost and we expect that we would conduct any large Phase 3 clinical trial of CAT-2054 in patients with hypercholesterolemia in collaboration with one or more partners. Likely collaborators may include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. In addition, if we are able to obtain marketing approval for CAT-1004 and other product candidates from foreign regulatory authorities, we intend to enter into strategic relationships with international biotechnology or pharmaceutical companies for the commercialization of CAT-1004 and other product candidates outside of the United States and Canada.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the potential differentiation of our product candidate from competing product candidates, design or results of clinical trials, the likelihood of approval by the FDA or comparable foreign regulatory authorities and the regulatory pathway for any such approval, the potential market for the product candidate, the costs and complexities of manufacturing and delivering the product to patients and the potential of competing products. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available for collaboration and whether such a collaboration could be more attractive than the one with us for our product candidate.

Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. In addition, our loan and security agreement with MidCap and Square 1 contains, and any collaboration agreements that we enter into in the future may contain, restrictions on our ability to enter into potential collaborations or to otherwise develop specified compounds.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

If we enter into collaborations with third parties for the development and commercialization of our product candidates, our prospects with respect to those product candidates will depend in significant part on the success of those collaborations.

We expect to enter into collaborations for the development and commercialization of certain of our product candidates. If we enter into such collaborations, we will have limited control over the amount and timing of resources that our collaborators will dedicate to the development or commercialization of our product candidates. Our ability to generate revenues from these arrangements will depend on any future collaborators' abilities to successfully perform the functions assigned to them in these arrangements. In addition, any future collaborators may have the right to abandon research or development projects and terminate applicable agreements, including funding obligations, prior to or upon the expiration of the agreed upon terms.

Collaborations involving our product candidates pose a number of risks, including the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs, based on clinical trial results, changes in the collaborators' strategic focus or available funding or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of such product or products;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If any future collaborator of ours is involved in a business combination, it could decide to delay, diminish or terminate the development or commercialization of any product candidate licensed to it by us.

We rely on third parties to conduct our clinical trials. If they do not perform satisfactorily, our business could be significantly harmed.

We do not independently conduct clinical trials of any of our product candidates. We rely on third parties, such as contract research organizations, clinical data management organizations, medical institutions and clinical investigators, to conduct these clinical trials and expect to rely on these third parties to conduct clinical trials of any other product candidate that we develop. Any of these third parties may terminate their engagements with us under certain circumstances. We may not be able to enter into alternative arrangements or do so on commercially reasonable terms. In addition, there is a natural transition period when a new contract research organization begins work. As a result, delays would likely occur, which could materially impact our ability to meet our expected clinical development timelines and harm our business, financial condition and prospects.

Further, our reliance on these third parties for clinical development activities limits our control over these activities, but we remain responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards. For example, notwithstanding the obligations of a contract research organization for a trial of one of our product candidates, we remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as current Good Clinical Practices, or cGCPs, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. The FDA enforces these cGCPs through periodic inspections of trial sponsors, principal investigators, clinical trial sites and institutional review boards. If we or our third-party contractors fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA may require us to perform additional clinical trials before approving our product candidates, which would delay the marketing approval process. We cannot be certain that, upon inspection, the FDA will determine that any of our clinical trials comply with cGCPs. We are also required to register clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Furthermore, the third parties conducting clinical trials on our behalf are not our employees, and except for remedies available to us under our agreements with such contractors, we cannot control whether or not they devote sufficient time, skill and resources to our ongoing development programs. These contractors may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities, which could impede their ability to devote appropriate time to our clinical programs. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we may not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates. If that occurs, we will not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates. In such an event, our financial results and the commercial prospects for any product candidates that we seek to develop could be harmed, our costs could increase and our ability to generate revenues could be impaired.

We also rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of any resulting products, producing additional losses and depriving us of potential product revenue.

We contract with third parties for the manufacture and distribution of our product candidates for clinical trials and expect to continue to do so in connection with our future development and commercialization efforts. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We currently have no manufacturing facilities and limited personnel with manufacturing experience. We rely on contract manufacturers to produce both drug substance and drug product required for our clinical trials. We plan to continue to rely upon contract manufacturers, and, potentially collaboration partners, to manufacture commercial quantities of our products, if approved. Reliance on such third-party contractors entails risks, including:

- manufacturing delays if our third-party contractors give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreements between us and them;
- the possible termination or nonrenewal of agreements by our third-party contractors at a time that is costly or inconvenient for us;
- the possible breach by the third-party contractors of our agreements with them;
- the failure of third-party contractors to comply with applicable regulatory requirements;
- the possible mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or active drug or placebo not being properly identified;
- the possibility of clinical supplies not being delivered to clinical sites on time, leading to clinical trial interruptions, or of drug supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales; and
- the possible misappropriation of our proprietary information, including our trade secrets and know-how.

We currently rely, and expect to continue to rely, on a small number of third-party contract manufacturers to supply the majority of our active pharmaceutical ingredient and required finished product for our preclinical studies and clinical trials. We do not have long-term agreements with any of these third parties. If any of our existing manufacturers should become unavailable to us for any reason, we may incur some delay in identifying or qualifying replacements.

Any manufacturing problem or the loss of a contract manufacturer could be disruptive to our operations, delay our clinical trials and, if our products are approved for sale, result in lost sales. Additionally, we rely on third parties to supply the raw materials needed to manufacture our product candidates. Any reliance on suppliers may involve several risks, including a potential inability to obtain critical materials and reduced control over production costs, delivery schedules, reliability and quality. Any unanticipated disruption to future contract manufacture caused by problems at suppliers could delay shipment of our product candidates, increase our cost of goods sold and result in lost sales.

If any of our product candidates are approved by any regulatory agency, we plan to enter into agreements with third-party contract manufacturers for the commercial production and distribution of those products. It may be difficult for us to reach agreement with a contract manufacturer on satisfactory terms or in a timely manner. In addition, we may face competition for access to manufacturing facilities as there are a limited number of contract manufacturers operating under current good manufacturing practices, or cGMPs, that are capable of manufacturing our product candidates. Consequently, we may not be able to reach agreement with third-party manufacturers on satisfactory terms, which could delay our commercialization efforts.

Third-party manufacturers are required to comply with cGMPs and similar regulatory requirements outside the United States. Facilities used by our third-party manufacturers must be approved by the FDA after we submit an NDA and before potential approval of the product candidate. Similar regulations apply to manufacturers of our product candidates for use or sale in foreign countries. We do not control the manufacturing process and are completely dependent on our third-party manufacturers for compliance with the applicable regulatory requirements for the manufacture of our product candidates. If our manufacturers cannot successfully manufacture material that conforms to our specifications or the strict regulatory requirements of the FDA and any applicable foreign regulatory authority, they will not be able to secure the applicable approval for their manufacturing facilities. If these facilities are not approved for commercial manufacture, we may need to find alternative manufacturing facilities, which could result in delays in obtaining approval for the applicable product candidate.

In addition, our manufacturers are subject to ongoing periodic inspections by the FDA and corresponding state and foreign agencies for compliance with cGMPs and similar regulatory requirements both prior to and following the receipt of marketing approval for any of our product candidates. Some of these inspections may be unannounced. Failure by any of our manufacturers to comply with applicable cGMPs or other regulatory requirements could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspensions or withdrawals of approvals, operating restrictions, interruptions in supply and criminal prosecutions, any of which could adversely affect supplies of our product candidates and significantly harm our business, financial condition and results of operations.

Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient patent protection for our product candidates, or if the scope of the patent protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to commercialize our product candidates successfully may be adversely affected.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary product candidates. If we do not adequately protect our intellectual property, competitors may be able to erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability. To protect our proprietary position, we file patent applications in the United States and abroad related to our novel product candidates that are important to our business. The patent application and approval process is expensive and time-consuming. We may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain. No consistent policy regarding the breadth of claims allowed in biotechnology and pharmaceutical patents has emerged to date in the United States or in many foreign jurisdictions. In addition, the determination of patent rights with respect to pharmaceutical compounds commonly involves complex legal and factual questions, which has in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain.

Our pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. Assuming the other requirements for patentability are met, currently, the first to file a patent application is generally

entitled to the patent. However, prior to March 16, 2013, in the United States, the first to invent was entitled to the patent. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we were the first to make the inventions claimed in our patents or pending patent applications, or that we were the first to file for patent protection of such inventions.

Moreover, because the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, our patents or pending patent applications may be challenged in the courts or patent offices in the United States and abroad. For example, we may be subject to a third party preissuance submission of prior art to the U.S. Patent and Trademark Office, or USPTO, or become involved in post-grant review procedures, oppositions, derivations, reexaminations, inter partes review or interference proceedings, in the United States or elsewhere, challenging our patent rights or the patent rights of others. An adverse determination in any such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. In addition, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized.

Our pending and future patent applications may not result in patents being issued which protect our product candidates, in whole or in part, or which effectively prevent others from commercializing competitive products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. In addition, the laws of foreign countries may not protect our rights to the same extent or in the same manner as the laws of the United States. For example, European patent law restricts the patentability of methods of treatment of the human body more than United States law does.

Even if our patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our patents by developing similar or alternative technologies or products in a non-infringing manner. Our competitors may also seek approval to market their own products similar to or otherwise competitive with our products. Alternatively, our competitors may seek to market generic versions of any approved products by submitting ANDAs to the FDA in which they claim that patents owned or licensed by us are invalid, unenforceable or not infringed. In these circumstances, we may need to defend or assert our patents, or both, including by filing lawsuits alleging patent infringement. In any of these types of proceedings, a court or other agency with jurisdiction may find our patents invalid or unenforceable, or that our competitors are competing in a non-infringing manner. Thus, even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business would be harmed.

While we have obtained composition of matter patents with respect to our most advanced product candidates, we also rely on trade secret protection for certain aspects of technology platform, including certain aspects of our SMART linker technology platform. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, consultants, independent contractors, advisors, contract manufacturers, suppliers and other third parties. We also enter into confidentiality and invention or patent assignment

agreements with employees and certain consultants. Any party with whom we have executed such an agreement may breach that agreement and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third-party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our business and competitive position could be harmed.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents, trademarks, copyrights or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming and divert the time and attention of our management and scientific personnel. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents, in addition to counterclaims asserting that our patents are invalid or unenforceable, or both. In any patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patent claims do not cover the invention. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and financial condition. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Even if we establish infringement, the court may decide not to grant an injunction against further infringing activity and instead award only monetary damages, which may or may not be an adequate remedy. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of shares of our common stock. Moreover, there can be no assurance that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings.

If we are sued for infringing intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.

Our commercial success depends, in part, on our ability to develop, manufacture, market and sell our product candidates and use our SMART linker technology platform without infringing the intellectual property and other proprietary rights of third parties. Third parties have U.S. and non-U.S.

issued patents and pending patent applications relating to compounds and methods of use for the treatment of DMD, severe hypertriglyceridemia and hypercholesterolemia, the key indications for our priority programs. If any third-party patents or patent applications are found to cover our product candidates or their methods of use, we may not be free to manufacture or market our product candidates as planned without obtaining a license, which may not be available on commercially reasonable terms, or at all.

There is a substantial amount of intellectual property litigation in the biotechnology and pharmaceutical industries, and we may become party to, or threatened with, litigation or other adversarial proceedings regarding intellectual property rights with respect to our products candidates, including interference proceedings before the U.S. Patent and Trademark Office. Third parties may assert infringement claims against us based on existing or future intellectual property rights. The outcome of intellectual property litigation is subject to uncertainties that cannot be adequately quantified in advance. The pharmaceutical and biotechnology industries have produced a significant number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we were sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do this. Proving invalidity is difficult. For example, in the United States, proving invalidity requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could significantly harm our business and operating results. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

If we are found to infringe a third-party's intellectual property rights, we could be forced, including by court order, to cease developing, manufacturing or commercializing the infringing product candidate or product. Alternatively, we may be required to obtain a license from such third-party in order to use the infringing technology and continue developing, manufacturing or marketing the infringing product candidate. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

Changes to the patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Recent patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or the Leahy-Smith Act, signed into law in September 2011, could increase those uncertainties and costs. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. In addition, the Leahy-Smith Act has transformed the U.S. patent system into a "first to file" system. The first-to-file provisions, however, only became effective in March

2013. Accordingly, it is not yet clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could make it more difficult to obtain patent protection for our inventions and increase the uncertainties and costs surrounding the prosecution of our or our collaboration partners' patent applications and the enforcement or defense of our or our collaboration partners' issued patents, all of which could harm our business, results of operations and financial condition.

The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. Additionally, there have been recent proposals for additional changes to the patent laws of the United States and other countries that, if adopted, could impact our ability to enforce our proprietary technology. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO and the relevant law-making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submissions, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to maintain the patents and patent applications covering our product candidates, our competitive position would be adversely affected.

We may not be able to enforce our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our product candidates in all countries throughout the world would be prohibitively expensive. The requirements for patentability may differ in certain countries, particularly in developing countries. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we may obtain patent protection, but where patent enforcement is not as strong as that in the United States. These products may compete with our products in jurisdictions where we do not have any issued or licensed patents and any future patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing.

Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws. Additionally, laws of some countries outside of the United States and Europe do not afford intellectual property protection to the same extent as the laws of the United States and Europe. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, including India, China and other developing countries, do not favor the enforcement of patents and other intellectual property rights. This could make it difficult for us to stop the infringement of our patents or the misappropriation of our other

intellectual property rights. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. Consequently, we may not be able to prevent third parties from practicing our inventions in certain countries outside the United States and Europe. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection, if our ability to enforce our patents to stop infringing activities is inadequate. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and resources from other aspects of our business. Furthermore, while we intend to protect our intellectual property rights in major markets for our products, we cannot ensure that we will be able to initiate or maintain similar efforts in all jurisdictions in which we may wish to market our products. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate.

Patent term may be inadequate to protect our competitive position on our products for an adequate amount of time.

Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. We expect to seek extensions of patent terms in the United States and, if available, in other countries where we are prosecuting patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). However, the applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

We may be subject to claims by third parties asserting that our employees or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our employees and our licensors' employees, including our senior management, were previously employed at universities or at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Some of these employees, including each member of our senior management, executed proprietary rights, non-disclosure and non-competition agreements, or similar agreements, in connection with such previous employment. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such third party. Litigation may be necessary to defend against such claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel or sustain damages. Such intellectual property rights could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or products. Such a license may not be available on commercially reasonable terms or at all. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

In addition, while we typically require our employees, consultants and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own, which may result in claims by or against us related to the ownership of such intellectual property. If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to our senior management and scientific personnel.

Risks Related to Regulatory Approval and Other Legal Compliance Matters

Even if we complete the necessary preclinical and clinical studies, the marketing approval process is expensive, time consuming and uncertain and may prevent us or any future collaborators from obtaining approvals for the commercialization of some or all of our product candidates. As a result, we cannot predict when or if, and in which territories, we, or any future collaborators, will obtain marketing approval to commercialize a product candidate.

The research, testing, manufacturing, labeling, approval, selling, marketing, promotion and distribution of drug products are subject to extensive regulation by the FDA and comparable foreign regulatory authorities, which regulations differ from country to country. We, and any future collaborators, are not permitted to market our product candidates in the United States or in other countries until we, or they, receive approval of an NDA from the FDA or marketing approval from applicable regulatory authorities outside the United States. Our product candidates are in various stages of development and are subject to the risks of failure inherent in drug development. We have not submitted an application for or received marketing approval for any of our product candidates in the United States or in any other jurisdiction. We have limited experience in conducting and managing the clinical trials necessary to obtain marketing approvals, including FDA approval of an NDA.

The process of obtaining marketing approvals, both in the United States and abroad, is lengthy, expensive and uncertain. It may take many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved.

In addition, changes in marketing approval policies during the development period, changes in or the enactment or promulgation of additional statutes, regulations or guidance or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. Any marketing approval we, or any future collaborators, ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

Any delay in obtaining or failure to obtain required approvals could materially adversely affect our ability or that of any future collaborators to generate revenue from the particular product candidate, which likely would result in significant harm to our financial position and adversely impact our stock price.

Failure to obtain marketing approval in international jurisdictions would prevent our product candidates from being marketed abroad.

In order to market and sell our products in the European Union and many other jurisdictions, we, and any future collaborators, must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve

additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The marketing approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We, and any future collaborators, may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA.

We, or any future collaborators, may not be able to obtain orphan drug designation or orphan drug exclusivity for our product candidates.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States. While we have obtained orphan drug designation from the FDA for CAT-1004 for the treatment of DMD, we, or any future collaborators, may seek orphan drug designations for other product candidates or in other jurisdictions and may be unable to obtain such designations.

Even if we, or any future collaborators, obtain orphan drug designation for a product candidate, we, or they, may not be able to obtain orphan drug exclusivity for that product candidate. Generally, a product with orphan drug designation only becomes entitled to orphan drug exclusivity if it receives the first marketing approval for the indication for which it has such designation, in which case the FDA or the EMA will be precluded from approving another marketing application for the same drug for that indication for the applicable exclusivity period. The applicable exclusivity period is seven years in the United States and ten years in Europe. The European exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or the EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition.

Even if we, or any future collaborators, obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

Even if we, or any future collaborators, obtain marketing approvals for our product candidates, the terms of approvals and ongoing regulation of our products may limit how we, or they, manufacture and market our products, which could materially impair our ability to generate revenue.

Once marketing approval has been granted, an approved product and its manufacturer and marketer are subject to ongoing review and extensive regulation. We, and any future collaborators, must therefore comply with requirements concerning advertising and promotion for any of our product candidates for which we or they obtain marketing approval. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved labeling. Thus, we and any future collaborators will not be able to promote any products we develop for indications or uses for which they are not approved.

In addition, manufacturers of approved products and those manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMPs, which include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation and reporting requirements. We, our contract manufacturers, any future collaborators and their contract manufacturers could be subject to periodic unannounced inspections by the FDA to monitor and ensure compliance with cGMPs.

Accordingly, assuming we, or any future collaborators, receive marketing approval for one or more of our product candidates, we, and any future collaborators, and our and their contract manufacturers will continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance and quality control.

If we, and any future collaborators, are not able to comply with post-approval regulatory requirements, we, and any future collaborators, could have the marketing approvals for our products withdrawn by regulatory authorities and our, or any future collaborators', ability to market any future products could be limited, which could adversely affect our ability to achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our operating results and financial condition.

Any of our product candidates for which we, or any future collaborators, obtain marketing approval in the future could be subject to post-marketing restrictions or withdrawal from the market and we, or any future collaborators, may be subject to substantial penalties if we, or they, fail to comply with regulatory requirements or if we, or they, experience unanticipated problems with our products following approval.

Any of our product candidates for which we, or any future collaborators, obtain marketing approval in the future, as well as the manufacturing processes, post-approval studies and measures, labeling, advertising and promotional activities for such product, among other things, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, including the requirement to implement a Risk Evaluation and Mitigation Strategy.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of a product. The FDA and other agencies, including the Department of Justice, closely regulate and monitor the post-approval marketing and promotion of products to ensure that they are manufactured, marketed and distributed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and if we, or any future collaborators, do not market any of our product candidates for which we, or they, receive marketing approval for only their approved indications, we, or they, may be subject to warnings or enforcement action for off-label marketing. Violation of the FDCA and other statutes, including the False Claims Act, relating to the promotion and advertising of prescription drugs may lead to investigations or allegations of violations of federal and state health care fraud and abuse laws and state consumer protection laws.

In addition, later discovery of previously unknown adverse events or other problems with our products or their manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- warning letters or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- restrictions on coverage by third-party payors;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of products;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

Recently enacted and future legislation may increase the difficulty and cost for us and any future collaborators to obtain marketing approval of and commercialize our product candidates and affect the prices we, or they, may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could, among other things, prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability, or the ability of any future collaborators, to profitably sell any products for which we, or they, obtain marketing approval. We expect that current laws, as well as other healthcare reform measures that will be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we, or any future collaborators, may receive for any approved products.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the Affordable Care Act, became law in 2010 and includes the following provisions of potential importance to our product candidates:

- an annual, non-deductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;
- expansion of federal healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers and enhanced penalties for noncompliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices;

- extension of manufacturers' Medicaid rebate liability;
- expansion of eligibility criteria for Medicaid programs;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program new requirements to report financial arrangements with physicians and teaching hospitals;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2024 unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the United States Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us and any future collaborators to more stringent product labeling and post-marketing testing and other requirements.

Our relationships with customers and third-party payors, among others, will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to penalties, including criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers and third-party payors will play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. Our arrangements with third-party payors and customers, if any, will subject us to broadly applicable fraud and abuse and other healthcare laws and regulations. The laws and regulations may constrain the business or financial arrangements and relationships through which we market, sell and distribute any products for which we obtain marketing approval. These include the following:

Anti-Kickback Statute. The federal healthcare Anti-Kickback Statute prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation or arranging of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;

False Claims Laws. The federal false claims laws impose criminal and civil penalties against individuals or entities for, among other things, knowingly presenting, or causing to be presented false or fraudulent claims for payment by a federal healthcare program or making a false statement or record material to payment of a false claim or avoiding, decreasing or concealing an obligation to pay money to the federal government, with potential liability including mandatory treble damages and significant per-claim penalties;

HIPAA. The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for, among other things, executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters, and, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, also imposes obligations, including mandatory contractual terms and technical safeguards, with respect to maintaining the privacy, security and transmission of individually identifiable health information;

Transparency Requirements. Federal laws require applicable manufacturers of covered drugs, biologics, devices and supplies to report payments and other transfers of value to physicians and teaching hospitals and ownership and investment interests by physicians; and

Analogous State and Foreign Laws. Analogous state and foreign fraud and abuse laws and regulations, such as state anti-kickback and false claims laws, which may be broader in scope, can apply to our business activities, including sales or marketing arrangements, and claims involving healthcare items or services and are generally broad and are enforced by many different federal and state agencies as well as through private actions. Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures. State laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion of products from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could significantly harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Although we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our

hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, but this insurance may not provide adequate coverage against potential liabilities. However, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Current or future environmental laws and regulations may impair our research, development or production efforts, which could adversely affect our business, financial condition, results of operations or prospects. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenues, if any.

In some countries, such as the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we, or any future collaborators, may be required to conduct a clinical trial that compares the cost-effectiveness of our product to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be materially harmed.

Risks Related to Employee Matters and Managing Growth

Our future success depends on our ability to retain our Chief Executive Officer and other key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on the pharmaceutical research and development and business development expertise of Jill C. Milne, our President and Chief Executive Officer, as well as the other principal members of our management, scientific and development team. Although we have entered into employment agreements with our executive officers, these agreements do not prevent them from terminating their employment with us at any time.

Our ability to compete in the highly competitive biotechnology and pharmaceuticals industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. Our industry has experienced a high rate of turnover of management personnel in recent years. If we lose one or more of our executive officers or other key employees, our ability to implement our business strategy successfully could be seriously harmed. Furthermore, replacing executive officers or other key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, gain marketing approval of and commercialize products successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key employees on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions.

We rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by others entities and may have commitments under consulting or advisory contracts with those entities that may limit their availability to us. If we are unable to continue to

attract and retain highly qualified personnel, our ability to develop and commercialize our product candidates will be limited.

We expect to grow our organization, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug manufacturing, regulatory affairs and sales, marketing and distribution. To manage these growth activities, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Our management may need to devote a disproportionate amount of its attention to managing these growth activities. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or identify, recruit and train additional qualified personnel. Our inability to manage the expansion of our operations effectively may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could also require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If we are unable to effectively manage our expected growth, our expenses may increase more than expected, our ability to generate revenues could be reduced and we may not be able to implement our business strategy, including the successful commercialization of our product candidates.

Risks Related to Our Common Stock and This Offering

No public market for our common stock currently exists, and an active trading market for our common stock may not develop.

Prior to this offering, there has been no public market for our common stock. The initial public offering price for our common stock will be determined through negotiations with the underwriters. This price will not necessarily reflect the price at which investors in the market will be willing to buy and sell our shares following this offering. Although we intend to list our common stock on The NASDAQ Global Market, an active trading market for our shares may never develop or, if developed, be maintained following this offering. If an active market for our common stock does not develop or is not maintained, it may be difficult for you to sell shares you purchase in this offering without depressing the market price for the shares or at all. An inactive trading market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

If you purchase shares of common stock in this offering, you will suffer immediate dilution in the book value of your investment.

The initial public offering price of our common stock is substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of our common stock in this offering, you will pay a price per share that substantially exceeds our net tangible book value per share after this offering. Based on the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, you will experience immediate dilution of $ per share, representing the difference between our pro forma net tangible book value per share after giving effect to this offering and the assumed initial public offering price. Purchasers of common stock in this offering will have contributed approximately % of the aggregate price paid by all purchasers of our stock and will own approximately % of our common stock outstanding after this offering, excluding any shares of our common stock that they may have acquired prior to this offering. Furthermore, if the underwriters exercise their over-allotment

option or our previously issued options and warrants to acquire common stock at prices below the assumed initial public offering price are exercised, you will experience further dilution. For a further description of the dilution that you will experience immediately after this offering, see "Dilution."

The price of our common stock is likely to be highly volatile, which could result in substantial losses for purchasers of our common stock in this offering.

Our stock price is likely to be highly volatile. The stock market in general and the market for smaller pharmaceutical and biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common stock at or above the initial public offering price and you may lose some or all of your investment. The market price for our common stock may be influenced by many factors, including:

- the success of existing or new competitive products or technologies;
- the timing and results of clinical trials of CAT-1004, CAT-2003, CAT-2054 and any of our other product candidates;
- commencement or termination of collaborations for our development programs;
- failure or discontinuation of any of our development programs;
- results of clinical trials of product candidates of our competitors;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our product candidates or clinical development programs;
- the results of our efforts to develop additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders or other stockholders;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in estimates or recommendations by securities analysts, if any, that cover our stock;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other factors described in this "Risk Factors" section.

Additionally, in the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because pharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could result in financial losses that could significantly harm our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

We are an "emerging growth company," and the reduced disclosure requirements applicable to emerging growth companies may make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company for up to five years. For so long as we remain an emerging growth company, we are permitted and plan to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or SOX Section 404, not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, reduced disclosure obligations regarding executive compensation and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an "emerging growth company," we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The NASDAQ Global Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We expect that we will need to hire additional accounting, finance and other personnel in connection with our becoming, and our efforts to comply with the requirements of being, a public company and our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements. These requirements will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect that the rules and regulations applicable to us as a public company may make it more difficult and more expensive for us to obtain director and officer liability insurance, which could make it more difficult for us to attract and retain

qualified members of our board of directors. We are currently evaluating these rules and regulations, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Pursuant to SOX Section 404 we will be required to furnish a report by our management on our internal control over financial reporting beginning with our second filing of an Annual Report on Form 10-K with the Securities and Exchange Commission, or the SEC, after we become a public company. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with SOX Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by SOX Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

A significant portion of our total outstanding shares is restricted from immediate resale but may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. After this offering and giving effect to the conversion of all outstanding shares of our preferred stock into 102,967,274 shares of our common stock upon the closing of this offering, we will have shares of common stock outstanding based on the 6,337,920 shares of our common stock outstanding as of December 31, 2014. Of these shares, the shares sold by us in this offering may be resold in the public market immediately, unless purchased by our affiliates. The remaining 109,305,194 shares are currently restricted under securities laws or as a result of lock-up or other agreements, but will be able to be sold after this offering as described in the "Shares Eligible for Future Sale" section of this prospectus. Moreover, after this offering, holders of an aggregate of 102,967,274 shares of our common stock, along with the holders of warrants to purchase 157,844 shares of common stock, will have rights, subject to conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We also plan to register all shares of common stock that we may issue under our equity compensation plans. Once we register these shares, they can be freely sold in the public market upon issuance and once vested, subject to volume limitations applicable to affiliates and the lock-up agreements described in the "Underwriting" section of this prospectus.

We do not anticipate paying any cash dividends on our capital stock in the foreseeable future, accordingly, stockholders must rely on capital appreciation, if any, for any return on their investment.

We have never declared nor paid cash dividends on our capital stock. We currently plan to retain all of our future earnings, if any, to finance the operation, development and growth of our business. Furthermore, the terms of our credit facility with MidCap and Square 1 preclude us from paying dividends, and any future debt agreements may also preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

After this offering, our executive officers, directors and principal stockholders, if they choose to act together, will continue to have the ability to control all matters submitted to stockholders for approval.

Upon the closing, our executive officers and directors, combined with our stockholders who owned more than 5% of our outstanding common stock before this offering and their affiliates will, in the aggregate, beneficially own shares representing approximately % of our capital stock. As a result, if these stockholders were to choose to act together, they would be able to control all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would control the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of ownership control may:

- delay, defer or prevent a change in control;
- entrench our management or the board of directors; or
- impede a merger, consolidation, takeover or other business combination involving us that other stockholders may desire.

Provisions in our corporate charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our corporate charter and our bylaws that will become effective upon the closing of this offering may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions:

- establish a classified board of directors such that all members of the board are not elected at one time;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- limit the manner in which stockholders can remove directors from the board;
- establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on at stockholder meetings;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;

- limit who may call a special meeting of stockholder meetings;

- authorize our board of directors to issue preferred stock without stockholder approval, which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors; and

- require the approval of the holders of at least 75% of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of our charter or bylaws.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. This could discourage, delay or prevent someone from acquiring us or merging with us, whether or not it is desired by, or beneficial to, our stockholders.

Our certificate of incorporation that will become effective upon the closing of this offering designates the state courts in the State of Delaware or, if no state court located within the State of Delaware has jurisdiction, the federal court for the District of Delaware, as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could discourage lawsuits against the company and our directors and officers.

Our certificate of incorporation that will become effective upon the closing of this offering provides that, unless our board of directors otherwise determines, the state courts in the State of Delaware or, if no state court located within the State of Delaware has jurisdiction, the federal court for the District of Delaware, will be the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to our company or our stockholders, any action asserting a claim against us or any of our directors or officers arising pursuant to any provision of the General Corporation Law of the State of Delaware, or any action asserting a claim against us or any of our directors or officers governed by the internal affairs doctrine. This exclusive forum provision may limit the ability of our stockholders to bring a claim in a judicial forum that such stockholders find favorable for disputes with us or our directors or officers, which may discourage such lawsuits against us and our directors and officers.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our share price and trading volume could decline.

The trading market for our common stock will likely depend, in part, on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. There can be no assurance that analysts will cover us, or provide favorable coverage. If one or more analysts downgrade our stock or change their opinion of our stock, our share price would likely decline. In addition, if one or more analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this prospectus, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management and expected market growth are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

These forward-looking statements include, among other things, statements about:

- our plans to identify, develop and commercialize novel small molecule drugs based on our SMART linker technology platform;
- our plans to have up to three product candidates in clinical trials in 2015;
- ongoing and planned clinical trials for our product candidates, whether conducted by us or by any future collaborators, including the timing of initiation of these trials and of the anticipated results;
- our plans to enter into collaborations for the development and commercialization of product candidates;
- the potential benefits of any future collaboration;
- our ability to receive research and development funding and achieve anticipated milestones under our collaborations;
- the timing of and our ability to obtain and maintain regulatory approvals for our product candidates;
- the rate and degree of market acceptance and clinical utility of any products for which we receive marketing approval;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our intellectual property position and strategy;
- our ability to identify additional products or product candidates with significant commercial potential;
- our expectations related to the use of proceeds from this offering;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- developments relating to our competitors and our industry; and
- the impact of government laws and regulations.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly in the "Risk Factors" section, that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, collaborations, joint ventures or investments that we may make or enter into.

You should read this prospectus and the documents that we have filed as exhibits to the registration statement of which this prospectus is a part completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

This prospectus includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe these industry publications and third-party research, surveys and studies are reliable, we have not independently verified such data.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of shares of our common stock in this offering will be approximately $ million, assuming an initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters exercise in full their over-allotment option, we estimate that the net proceeds from this offering will be approximately $ million.

A $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase or decrease our net proceeds from this offering by approximately $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions payable by us. An increase or decrease of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease our net proceeds from this offering by approximately $, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions payable by us.

As of September 30, 2014, we had cash, cash equivalents and available-for-sale investments of approximately $20.7 million. We currently estimate that we will use the net proceeds from this offering, together with our cash, cash equivalents and available-for-sale investments, as follows:

- approximately $ million for the clinical development of CAT-1004;
- approximately $ million for the clinical development of our CAT-2000 series product candidates; and
- the remainder for working capital and other general corporate purposes.

This expected use of the net proceeds from this offering and our existing cash, cash equivalents and available-for-sale investments represents our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development and commercialization efforts, the status of and results from clinical trials, any collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering. We have no current agreements, commitments or understandings for any material acquisitions or licenses of any products, businesses or technologies.

Based on our planned use of the net proceeds from this offering and our existing cash, cash equivalents and available-for-sale investments, we estimate that such funds will be sufficient to enable us to complete our planned Phase 1/2 clinical trial of CAT-1004, our ongoing Phase 2 clinical trial of CAT-2003 and our planned Phase 2 development of CAT-2054, and to fund our operating expenses, debt service and capital expenditure requirements at least through 2016. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. We do not expect that the net proceeds from this offering and our existing cash, cash equivalents and available-for-sale investments will be sufficient to enable us to fund the completion of development of any of our product candidates.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DIVIDEND POLICY

We have never declared nor paid cash dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. We do not intend to pay cash dividends in respect of our common stock in the foreseeable future. In addition, our ability to pay cash dividends on our common stock is prohibited by the covenants of our credit facility with MidCap Financial SBIC, LP and Square 1 Bank.

CAPITALIZATION

The following table sets forth our capitalization as of September 30, 2014:

- on an actual basis;
- on a pro forma basis to give effect to the conversion of all outstanding shares of our preferred stock into 102,967,274 shares of our common stock, the conversion of our outstanding warrants to purchase 157,844 shares of preferred stock into warrants to purchase 157,844 shares of common stock, resulting in the reclassification of our warrant liability to stockholders' (deficit) equity, and the filing and effectiveness of a restated certificate of incorporation, all upon the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to our issuance and sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Our capitalization following the closing of this offering will depend on the actual initial public offering price and other terms of this offering determined at pricing. You should read this table together with our financial statements and the related notes appearing at the end of this prospectus and the sections of this prospectus titled "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	As of September 30, 2014		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except share and per share data)		
Notes payable, net of discount	$ 4,725	$ 4,725	$
Warrant liability	110	—	—
Series A convertible preferred stock, par value $0.001 per share; 68,837,703 shares authorized, issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	47,898	—	—
Series B convertible preferred stock, par value $0.001 per share; 37,830,473 shares authorized, 34,129,571 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	32,248	—	
Preferred stock, par value $0.001 per share; no shares authorized, issued or outstanding actual; shares authorized, no shares issued or outstanding pro forma and pro forma as adjusted	—	—	—
Common stock, par value $0.001 per share; 132,000,000 shares authorized, 5,734,920 shares issued and outstanding, actual; shares authorized, pro forma and pro forma as adjusted; 108,702,194 shares issued and outstanding, pro forma and shares issued and outstanding, pro forma as adjusted	6	109	
Additional paid-in capital	2,021	82,174	
Accumulated deficit	(69,354)	(69,354)	
Total stockholders' (deficit) equity	(67,327)	12,929	
Total capitalization	$ 17,654	$ 17,654	$

A $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted amount of total stockholders' equity by approximately $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions payable by us. An increase or decrease of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease total stockholders' equity on a pro forma as adjusted basis by $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions payable by us.

The table above does not include:

- 605,694 shares of our common stock issuable upon the exercise of warrants outstanding as September 30, 2014, at a weighted-average exercise price of $0.34 per share;
- 15,609,837 shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2014, at a weighted-average exercise price of $0.30 per share;
- 2,803,542 shares of our common stock available for future issuance as of September 30, 2014 under our amended and restated 2008 equity incentive plan; and
- additional shares of our common stock that will become available for future issuance in connection with this offering under our 2015 stock incentive plan.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

Our historical net tangible book value (deficit) as of September 30, 2014 was $(67.3) million, or $(11.74) per share of our common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and preferred stock, which is not included within our stockholders' equity (deficit). Historical net tangible book value per share represents historical net tangible book value (deficit) divided by the 5,734,920 shares of our common stock outstanding as of September 30, 2014.

Our pro forma net tangible book value as of September 30, 2014 was $12.9 million, or $0.12 per share of our common stock. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities, after giving effect to the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 102,967,274 shares of our common stock upon the closing of this offering and the conversion of warrants to purchase preferred stock into warrants to purchase common stock resulting in the reclassification of our warrant liability to stockholders' (deficit) equity. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares outstanding as of September 30, 2014, after giving effect to the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 102,967,274 shares of our common stock upon the closing of this offering.

After giving effect to our issuance and sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of September 30, 2014 would have been $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value per share of $ to existing stockholders and immediate dilution of $ in pro forma as adjusted net tangible book value per share to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of September 30, 2014	$ (11.74)	
Increase per share attributable to the conversion of outstanding preferred stock and the reclassification of the warrant liability	11.86	
Pro forma net tangible book value per share as of September 30, 2014	0.12	
Increase in net tangible book value per share attributable to new investors		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors		$

A $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase or decrease our pro forma as adjusted net tangible book value by $ million, our pro forma as adjusted net tangible book value per share after this offering by $ and dilution per share to new investors purchasing shares in this offering by $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated

underwriting discounts and commissions payable by us. An increase or decrease of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted net tangible book value per share after this offering by $ and decrease or increase the dilution per share to new investors participating in this offering by $, assuming no change in the assumed initial public offering price and after deducting estimated underwriting discounts and commissions payable by us.

If the underwriters exercise their over-allotment option in full, the pro forma as adjusted net tangible book value will increase to $ per share, representing an immediate increase to existing stockholders of $ per share and an immediate dilution of $ per share to new investors. If any shares are issued upon exercise of outstanding options or outstanding warrants, you will experience further dilution.

The following table summarizes, on a pro forma basis as of September 30, 2014, after giving effect to the conversion of all of our outstanding preferred stock into common stock, the differences between the number of shares of common stock purchased from us, the total consideration paid to us and the average price per share paid by existing stockholders and by new investors purchasing shares of common stock in this offering. The calculation below is based on an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us:

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders	108,702,194	%	$ 80,651,382	%	$ 0.74
New investors					
Total		100%		100%	

A $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, would increase or decrease the total consideration paid by new investors by $ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by percentage points, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. An increase or decrease of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase or decrease the total consideration paid by new investors by $ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by percentage points, assuming no change in the assumed initial public offering price.

The number of shares purchased from us by existing stockholders is based on 108,702,194 shares of our common stock outstanding as of September 30, 2014, after giving effect to the automatic conversion of all of our outstanding shares of preferred stock into 102,967,274 shares of common stock upon the closing of this offering, and excludes:

- 605,694 shares of our common stock issuable upon the exercise of warrants outstanding as of September 30, 2014, at a weighted-average exercise price of $0.34 per share;
- 15,609,837 shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2014, at a weighted-average exercise price of $0.30 per share;

- 2,803,542 additional shares of our common stock available for future issuance as of September 30, 2014 under our amended and restated 2008 equity incentive plan; and

- additional shares of our common stock that will become available for future issuance in connection with this offering under our 2015 stock incentive plan.

If the underwriters exercise their over-allotment option in full, the following will occur:

- the percentage of shares of our common stock held by existing stockholders will decrease to % of the total number of shares of our common stock outstanding after this offering; and

- the number of shares of our common stock held by new investors will increase to , or % of the total number of shares of our common stock outstanding after this offering.

SELECTED FINANCIAL DATA

You should read the following selected financial data together with our financial statements and the related notes appearing at the end of this prospectus and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this prospectus. We have derived the statement of operations data for the years ended December 31, 2012 and 2013 and the balance sheet data as of December 31, 2012 and 2013 from our audited financial statements appearing at the end of this prospectus. The statement of operations data for the nine months ended September 30, 2013 and 2014 and the balance sheet data as of September 30, 2014 have been derived from our unaudited financial statements appearing at the end of this prospectus and have been prepared on the same basis as the audited financial statements. In the opinion of management, the unaudited financial data reflects all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of the financial information as of and for the periods presented. Our historical results are not necessarily indicative of results that should be expected in any future period, and our results for any interim period are not necessarily indicative of results that should be expected for any full year.

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands, except share and per share data)			
Statement of Operations Data:				
Operating expenses:				
Research and development	$ 12,408	$ 13,994	$ 10,253	$ 11,361
General and administrative	3,265	4,125	2,962	4,443
Total operating expenses	15,673	18,119	13,215	15,804
Loss from operations	(15,673)	(18,119)	(13,215)	(15,804)
Other income (expense):				
Other income (expense), net	4	1	(2)	3
Interest expense	—	—	—	(57)
Total other income (expense), net	4	1	(2)	(54)
Net loss and comprehensive loss	$ (15,669)	$ (18,118)	$ (13,217)	$ (15,858)
Net loss per share—basic and diluted	$ (3.35)	$ (3.72)	$ (2.74)	$ (2.99)
Weighted-average number of common shares used in net loss per share —basic and diluted	4,682,198	4,870,362	4,820,036	5,312,210
Pro forma net loss per share—basic and diluted (unaudited)		$ (0.23)		$ (0.15)
Weighted-average number of common shares used in pro forma net loss per share—basic and diluted (unaudited)		78,511,025		108,279,484

See Note 2 in the notes to our financial statements appearing at the end of this prospectus for a description of the method used to calculate basic and diluted net loss per share and unaudited pro forma basic and diluted net loss per share.

	As of December 31,		As of September 30,
	2012	2013	2014
	(in thousands)		
Balance Sheet Data:			
Cash and cash equivalents	$ 5,434	$ 30,474	$ 15,675
Total assets	6,314	31,002	21,370
Current liabilities	1,888	2,930	3,636
Notes payable, net of discount	—	—	4,725
Warrant liability	—	—	110
Convertible preferred stock	38,724	80,146	80,146
Accumulated deficit	(35,378)	(53,496)	(69,354)
Total stockholders' (deficit) equity	(34,436)	(52,184)	(67,327)

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and the related notes and other financial information included elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. You should review the "Risk Factors" section of this prospectus for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutics based on our proprietary Safely Metabolized And Rationally Targeted, or SMART, linker technology platform. Our SMART linker technology platform is based on the concept of treating diseases by simultaneously modulating multiple targets in one or more related disease pathways. We engineer bi-functional product candidates that are conjugates of two molecules, or bioactives, each with known pharmacological activity, joined by one of our proprietary SMART linkers. Our SMART linker conjugates are designed for enhanced efficacy and improved safety and tolerability. Our initial focus is on treatments for orphan diseases, such as Duchenne muscular dystrophy, or DMD. We are also developing other product candidates for the treatment of serious lipid disorders.

We have applied our SMART linker technology platform to build a development pipeline that includes three clinical-stage product candidates and multiple programs in preclinical development. Our drug candidates are small molecules. Our lead product candidate, CAT-1004, is an oral small molecule that we believe has the potential to be a disease-modifying therapy for the treatment of DMD, a fatal genetic disorder involving progressive muscle degeneration. CAT-2003 is in Phase 2 trials for the treatment of patients with multifactorial chylomicronemia syndrome, or MFC, and refractory severe hypertriglyceridemia, or rSHTG, diseases involving extremely elevated triglyceride levels that put patients at risk for the potentially life-threatening condition of pancreatitis. We are developing CAT-2054 for the treatment of patients with hypercholesterolemia, or elevated low density lipoprotein cholesterol, or LDL-C, levels, a disease that increases the risk of cardiovascular events. In January 2015, we initiated a Phase 1 clinical trial to assess the safety, tolerability and pharmacokinetics of CAT-2054 in healthy volunteers. CAT-4001 is in preclinical studies and is being developed for the treatment of amyotrophic lateral sclerosis and Friedreich's ataxia, two rare degenerative diseases of the central nervous system.

Since our inception in June 2008, we have devoted substantially all of our resources to developing our proprietary platform technology, identifying potential product candidates, undertaking preclinical studies and conducting clinical trials for our three clinical-stage compounds, building our intellectual property portfolio, organizing and staffing our company, business planning, raising capital, and providing general and administrative support for these operations. To date, we have financed our operations primarily through private placements of our preferred stock and a debt financing. From our inception through September 30, 2014, we have raised an aggregate of $85.7 million, of which $80.5 million consisted of gross proceeds from private placements of preferred stock and $5.0 million consisted of gross proceeds from a secured debt financing.

We have not generated any revenue to date. We have incurred significant annual net operating losses in every year since our inception and expect to incur a net operating loss in 2015 and continue to incur net operating losses for the foreseeable future. Our net losses were $15.7 million, $18.1 million

and $15.9 million for the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2014, respectively. As of September 30, 2014, we had an accumulated deficit of $69.4 million. We expect to continue to incur significant expenses and increasing operating losses for the next several years. Our net losses may fluctuate significantly from quarter to quarter and year to year. We anticipate that our expenses will increase significantly if and as we continue to develop and conduct clinical trials with respect to CAT-1004 and our CAT-2000 series product candidates; initiate and continue research, preclinical and clinical development efforts for our other product candidates and potential product candidates; maintain, expand and protect our intellectual property portfolio; establish a commercial infrastructure to support the marketing and sale of certain of our product candidates; and hire additional personnel, such as clinical, regulatory, quality control and scientific personnel. In addition, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company.

Financial Operations Overview

Revenue

To date, we have not generated any revenue from product sales or any other source and do not expect to generate any revenue from the sale of products in the near future. In the future, we will seek to generate revenue primarily from a combination of product sales and collaborations with strategic partners.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our drug discovery efforts, and the development of our product candidates, which include:

- employee-related expenses including salaries, benefits and stock-based compensation expense;
- expenses incurred under agreements with third parties, including contract research organizations, or CROs, that conduct clinical trials and research and development and preclinical activities on our behalf;
- the cost of consultants;
- the cost of lab supplies and acquiring, developing and manufacturing preclinical study materials; and
- facilities and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other supplies.

Research and development costs are expensed as incurred. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

The following summarizes our most advanced current research and development programs:

- CAT-1004 is an orally administered SMART linker conjugate of salicylate and the omega-3 fatty acid docosahexaenoic acid, or DHA, that we designed to enhance the activity of salicylate and DHA in modulating the NF-kB pathway at multiple points. NF-kB, or nuclear factor kappa-light-chain-enhancer of activated B cells, is a protein that coordinates cellular response to damage, stress and inflammation and plays an important role in muscle health. We plan to initiate a Phase 1/2 clinical trial of CAT-1004 for the treatment of DMD in the first half of 2015 and expect to report top-line Phase 2 data in mid-2016. If the results from our Phase 1/2 clinical

trial are positive, we intend to conduct a single six-month Phase 3 pivotal clinical trial in order to seek marketing approval.

- CAT-2003 is an orally administered SMART linker conjugate of the omega-3 fatty acid eicosapentaenoic acid, or EPA, and nicotinic acid that we designed to modulate the SREBP pathway in the intestine. SREBP is a master regulator of lipid metabolism and controls levels of both triglycerides and LDL-C. We are currently conducting a Phase 2a clinical trial of CAT-2003 for the treatment of MFC and rSHTG and expect to report top-line data in the second quarter of 2015.

- CAT-2054 is an orally administered SMART linker conjugate of EPA and nicotinic acid, designed to modulate the SREBP pathway in the liver. We are initially developing CAT-2054 to treat patients with hypercholesterolemia for whom existing treatments are insufficient. In January 2015, we initiated a Phase 1 clinical trial to assess the safety, tolerability and pharmacokinetics of CAT-2054 in healthy volunteers. If the results of this clinical trial are positive, we intend to initiate a Phase 2 clinical trial of CAT-2054 for the treatment of hypercholesterolemia in the fourth quarter of 2015.

Other research and development programs include our CAT-4001 development program and activities related to exploratory efforts, target validation and lead optimization for our early stage programs and our proprietary platform technology.

We typically use our employee, consultant and infrastructure resources across our development programs. We track outsourced development costs by product candidate or development program, but we do not allocate personnel costs, other internal costs or external consultant costs to specific product candidates or development programs. We record our research and development expenses net of any research and development tax incentives we are entitled to receive from government authorities.

The following table summarizes our research and development expenses by program:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands)			
CAT-1004	$ 2,464	$ 108	$ 89	$ 340
CAT-2003	3,281	6,727	4,836	2,656
CAT-2054	—	652	352	2,566
Other research and platform programs	1,152	680	518	976
Costs not directly allocated to programs:				
Employee expenses including cash compensation, benefits and share-based compensation	3,537	3,992	3,065	3,385
Facilities	718	754	563	552
Consultants and professional expenses, including share-based compensation	717	605	472	527
Other	539	476	358	359
Total costs not directly allocated to programs	5,511	5,827	4,458	4,823
Total research and development expenses	$ 12,408	$ 13,994	$ 10,253	$ 11,361

The successful development of our product candidates is highly uncertain. Accordingly, at this time, we cannot reasonably estimate the nature, timing and costs of the efforts that will be necessary to complete the remainder of the development of these product candidates. We are also unable to predict

when, if ever, material net cash inflows will commence from CAT-1004, our CAT-2000 series product candidates or any of our other current or potential product candidates. This is due to the numerous risks and uncertainties associated with developing medicines, including the uncertainties of:

- establishing an appropriate safety profile with investigational new drug application, or IND, enabling toxicology studies;
- successful enrollment in, and completion of clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- launching commercial sales of the products, if and when approved, whether alone or in collaboration with others; and
- a continued acceptable safety profile of the products following approval.

A change in the outcome of any of these variables with respect to the development of any of our product candidates would significantly change the costs and timing associated with the development of that product candidate.

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect research and development costs to increase significantly for the foreseeable future as our product candidate development programs progress. However, we do not believe that it is possible at this time to accurately project total program-specific expenses through commercialization. There are numerous factors associated with the successful commercialization of any of our product candidates, including future trial design and various regulatory requirements, many of which cannot be determined with accuracy at this time based on our stage of development. Additionally, future commercial and regulatory factors beyond our control will impact our clinical development programs and plans.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in executive, finance, accounting, business development and human resources functions. Other significant costs include facility costs not otherwise included in research and development expenses, legal fees relating to patent and corporate matters, and fees for accounting and consulting services.

We anticipate that our general and administrative expenses will increase in the future to support continued research and development activities, potential commercialization of our product candidates and increased costs of operating as a public company. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, lawyers and accountants, among other expenses. Additionally, we anticipate increased costs associated with being a public company including expenses related to services associated with maintaining compliance with exchange listing and Securities and Exchange Commission requirements, insurance costs and investor relations costs.

Critical Accounting Policies and Estimates

This discussion and analysis of our financial condition and results of operations is based on our financial statements, which we have prepared in accordance with United States generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of expenses during the reporting periods. On an ongoing basis, we evaluate our estimates and judgments, including those described in greater detail below. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in the notes to our financial statements included elsewhere in this prospectus, we believe that the following accounting policies are the most critical to aid you in fully understanding and evaluating our financial condition and results of operations.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued expenses. This process involves reviewing quotations and contracts, identifying services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. The significant estimates in our accrued research and development expenses include the costs incurred for services performed by CROs in connection with research and development activities for which we have not yet been invoiced.

We base our expenses related to CROs on our estimates of the services received and efforts expended pursuant to quotes and contracts with CROs that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our CROs will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid expense accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting expense amounts that are too high or too low in any particular period. To date, there have been no material differences between our estimates of such expenses and the amounts actually incurred.

Stock-Based Compensation

We measure stock-based awards granted to employees and members of the board of directors at fair value on the date of grant and recognize the corresponding stock-based compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the

vesting period of the respective award. We have historically granted stock options with exercise prices equivalent to the fair value of our common stock as of the date of grant.

We measure other stock-based awards granted to non-employees at fair value as the awards vest and recognize the resulting value as expense during the period the related services are rendered. At the end of each financial reporting period prior to completion of the service, we re-measure the unvested portion of these awards.

We estimate the fair value of each stock option grant using the Black-Scholes option-pricing model. We historically have been a private company and lack company-specific historical and implied volatility information. Therefore, we estimate our expected volatility based on the historical volatility of a representative group of publicly traded biopharmaceutical companies and expect to continue to do so until we have adequate historical data regarding the volatility of our traded stock price. We determine the expected term of our options utilizing the "simplified" method for awards that qualify as "plain-vanilla" options, while we determine the expected term of other nonemployee options based on the contractual term of the options. We determine the risk-free interest rate by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. We assume an expected dividend yield of zero because we have never paid cash dividends and do not expect to pay any cash dividends in the foreseeable future.

We estimated the fair value of stock options granted using the Black-Scholes option-pricing model based on the assumptions noted in the following table:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
Risk-free interest rate	1.02 - 1.10%	0.92 - 2.03%	0.92 - 2.03%	1.87 - 2.45%
Expected dividend yield	—	—	—	—
Expected term (in years)	6.25 - 10.0	6.25 - 10.0	6.25 - 10.0	6.25 - 10.0
Expected volatility	80.8 - 81.2%	75.0 - 81.5%	75.0 - 81.5%	76.0 - 81.6%

These assumptions represented our best estimates, but the estimates involve inherent uncertainties and the application of our judgment. As a result, if factors change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different. We recognize stock-based compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate for pre-vesting forfeitures, we have considered our historical experience of actual forfeitures. If our future actual forfeiture rate is materially different from our estimate, our stock-based compensation expense could be significantly different from what we have recorded in the prior periods. However, estimates will not be necessary to determine the fair value of new awards once our common stock begins to be publicly traded.

The following table summarizes the classification of our stock-based compensation expense recognized in our statements of operations:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands)			
Research and development expenses	$ 131	$ 224	$ 128	$ 289
General and administrative expenses	65	119	68	316
	$ 196	$ 343	$ 196	$ 605

Valuations of Common Stock

Our board of directors determines the fair value of our common stock on each date of grant, with input from management. Due to the absence of a public trading market for our common stock, our board of directors' determination of the fair value of our common stock has historically been performed using methodologies, approaches and assumptions consistent with the American Institute of Certified Public Accountants Audit and Accounting Practice Aid Series: *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. We performed a contemporaneous valuation, with the assistance of a third-party specialist, as of October 31, 2013. For financial reporting purposes, we also performed common stock valuations retrospectively, with the assistance of a third-party specialist, as of April 1, 2014 and August 28, 2014. Our board of directors has considered various objective and subjective factors, along with input from management, to determine its best estimate of the fair value of our common stock as of each grant date, including the following:

- the prices at which we sold shares of preferred stock and the superior rights and preferences of the preferred stock relative to our common stock;
- the progress of our research and development programs, including the status of clinical trials for our product candidates;
- our stage of development and business strategy;
- our financial condition, including cash on hand and borrowings under our credit facility;
- our historical and forecasted performance and operating results;
- the composition of, and changes to, our management team and board of directors;
- the lack of an active public market for our common stock and our preferred stock;
- the likelihood of achieving a liquidity event such as a sale of our company or an initial public offering, or IPO, given prevailing market conditions;
- the analysis of initial public offerings and the market performance of similar companies in the biopharmaceutical industry;
- external market conditions affecting the biopharmaceutical industry; and
- trends within the biopharmaceutical industry.

Historically, the dates of our contemporaneous valuations have not always coincided with the dates of our stock-based compensation grants. In determining the exercise prices of the options granted, our board of directors considered, among other things, the most recent contemporaneous or retrospective valuations of our common stock and our assessment of additional objective and subjective factors we believed were relevant as of the grant date. The additional factors considered when determining any changes in fair value between the most recent contemporaneous valuation, or if available the most recent retrospective valuation, and the grant dates included, when available, the prices paid in recent transactions involving our equity securities, as well as our stage of development, our operating and financial performance and current business conditions.

There are significant judgments and estimates inherent in the determination of the fair value of our common stock, including the contemporaneous and retrospective valuations. These judgments and estimates include assumptions regarding our future operating performance, the time to completing an IPO or other liquidity event and the determinations of the appropriate valuation methods. If we had made different assumptions, our stock-based compensation expense, net loss and net loss per common share could have been significantly different.

Valuation Methodologies

Our common stock valuations were prepared using a hybrid of the option-pricing method, or OPM, and the probability-weighted expected return method, or PWERM.

OPM. The OPM treats each class of common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the preferred stock liquidation preference at the time of a liquidity event, such as a strategic sale, merger or IPO. The common stock is modeled as a call option on the underlying equity value at a predetermined exercise price. In the model, the exercise price is based on a comparison with the total equity value rather than, as in the case of a regular call option, a comparison with a per share stock price. Thus, common stock is considered to be a call option with a claim on the enterprise at an exercise price equal to the remaining value immediately after the preferred stock liquidation preference is paid.

The OPM uses the Black-Scholes option-pricing model to price the call options. This model defines the securities' fair values as functions of the current fair value of a company and uses assumptions such as the anticipated timing of a potential liquidity event and the estimated volatility of the equity securities. The aggregate value of the common stock derived from the OPM is then divided by the number of shares of common stock outstanding to arrive at the per share value.

We used the OPM backsolve approach to estimate enterprise value under the OPM. The OPM backsolve approach uses the OPM to calculate the implied equity value based on recent sales of the company's securities. For the OPM, we based our assumed volatility factor on the historical trading volatility of our publicly traded peer companies. At each valuation date, we determined the appropriate volatility to be used, considering such factors as our expected time to a liquidity event and our stage of development.

To derive the fair value of our common stock using the OPM, we calculated the proceeds to the common stockholders based on the preferences and priorities of the preferred and common stock. We then applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

PWERM. The PWERM is a scenario-based methodology that estimates the fair value of common stock based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock. A discount for lack of marketability is then applied to the common stock to account for the lack of access to an active public market.

For our common stock valuations as of October 31, 2013, April 1, 2014 and August 28, 2014, we used a hybrid of the OPM and PWERM and considered two types of future event scenarios: an IPO and a sale transaction. We valued the IPO scenario using the OPM backsolve approach for the October 31, 2013 valuation. We used the guideline public company method, which includes comparisons to publicly traded companies in our industry that recently completed IPOs, for the April 1, 2014 and August 28, 2014 valuations. We valued the sale scenario using the OPM backsolve approach. Our board of directors determined the relative probability of each type of future event scenario based on an analysis of market conditions at the time, including then-current IPO valuations of similarly situated companies, and expectations as to the timing and likely prospects of the future-event scenarios.

To derive the fair value of the common stock for each scenario using the hybrid PWERM and OPM, we calculated the proceeds to the common stockholders based on the preferences and priorities of the preferred and common stock. We then applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

Option Grants

The following table summarizes by grant date the number of shares of common stock subject to options granted between January 1, 2014 and January 23, 2015, the per share exercise price of the options, the fair value of the common stock underlying the options on the date of grant and the per share estimated fair value of the options. For financial reporting purposes, the value of the April 1, 2014 valuation has been applied retrospectively to our March 19, 2014 option grants and the value of the October 28, 2014 valuation has been applied retrospectively to our August 28, 2014, October 21, 2014 and November 5, 2014 option grants.

Grant Date	Number of Common Shares Underlying Options Granted	Per Share Exercise Price of Options(1)	Fair Value of Common Stock on Grant Date(1)	Retrospective Fair Value Per Share on Grant Date(2)
March 19, 2014	5,581,220	$ 0.53	$ 0.53	$ 0.56
August 28, 2014	727,280	$ 0.56	$ 0.56	$ 0.60
October 21, 2014	700,000	$ 0.56	$ 0.56	$ 0.60
November 5, 2014	50,000	$ 0.56	$ 0.56	$ 0.60

(1) Represents the determination by our board of directors of the fair value of our common stock on the date of grant, taking into consideration the various objective and subjective factors described above.

(2) The fair value of common stock at the grant date was adjusted in connection with a retrospective fair value assessment for financial reporting purposes.

JOBS Act

In April 2012, the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, was enacted. Section 107 of the JOBS Act provides that an "emerging growth company," or EGC, can take advantage of the extended transition period for complying with new or revised accounting standards. Thus, an EGC can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

We are in the process of evaluating the benefits of relying on other exemptions and reduced reporting requirements under the JOBS Act. Subject to certain conditions, as an EGC, we intend to rely on certain of these exemptions, including exemptions from the requirement to provide an auditor's attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act and from any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, known as the auditor discussion and analysis. We will remain an EGC until the earlier of: the last day of the fiscal year in which we have total annual gross revenues of $1 billion or more; the last day of the fiscal year following the fifth anniversary of the date of the completion of this offering; the date on which we have issued more than $1 billion in nonconvertible debt during the previous three years; or the date on

which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission.

Results of Operations

Comparison of Nine Months Ended September 30, 2013 and 2014

The following table summarizes our results of operations for the nine months ended September 30, 2013 and 2014, together with the dollar increase or decrease in those items:

	Nine Months Ended September 30,		
	2013	2014	Change
	(in thousands)		
Operating expenses:			
Research and development	$ 10,253	$ 11,361	$ 1,108
General and administrative	2,962	4,443	1,481
Total operating expenses	13,215	15,804	2,589
Loss from operations	(13,215)	(15,804)	(2,589)
Other expense	(2)	(54)	(52)
Net loss	$ (13,217)	$ (15,858)	$ (2,641)

Research and Development Expenses

Research and development expenses increased by $1.1 million to $11.4 million for the nine months ended September 30, 2014 from $10.3 million for the nine months ended September 30, 2013, an increase of 11%. The increase in research and development expenses was partially attributable to a net increase of $0.7 million in direct program costs, reflecting an increase of $2.2 million for CAT-2054 manufacturing and preclinical development costs associated with IND-enabling studies, an increase of $0.5 million in our general research and platform programs and an increase of $0.2 million for CAT-1004 manufacturing and preclinical development costs, which were partially offset by a decrease of $2.2 million in CAT-2003 clinical trial, manufacturing and preclinical development costs due to the completion of two Phase 2 clinical trials in late 2013 and early 2014. In addition, the costs related to internal research and development increased by $0.4 million, primarily attributable to stock-based compensation expense.

General and Administrative Expenses

General and administrative expenses increased by $1.5 million to $4.4 million for the nine months ended September 30, 2014 from $3.0 million for the nine months ended September 30, 2013, an increase of 50%. The increase in general and administrative expenses was primarily attributable to increased employee costs of $0.8 million associated with hiring additional senior personnel, including an increase of $0.6 million in salaries and benefits and an increase of $0.2 million in stock-based compensation expense. Additionally, professional and consulting fees increased $0.7 million.

Other Expense

Other expense consists of interest expense, which increased by $52,000 to $54,000 for the nine months ended September 30, 2014, from $2,000 for the nine months ended September 30, 2013, due to the interest expense on our credit facility which we entered into in August 2014.

Comparison of Years Ended December 31, 2012 and 2013

The following table summarizes our results of operations for the years ended December 31, 2012 and 2013, together with the dollar increase or decrease in those items:

	Year Ended December 31,		
	2012	2013	Change
	(in thousands)		
Operating expenses:			
Research and development	$ 12,408	$ 13,994	$ 1,586
General and administrative	3,265	4,125	860
Total operating expenses	15,673	18,119	2,446
Loss from operations	(15,673)	(18,119)	(2,446)
Other income	4	1	(3)
Net loss	$ (15,669)	$ (18,118)	$ (2,449)

Research and Development Expenses

Research and development expenses increased by $1.6 million to $14.0 million in 2013 from $12.4 million in 2012, an increase of 13%. The increase in research and development expenses was primarily attributable to an increase of $1.3 million in direct program expenses, reflecting a $3.4 million increase in CAT-2003 clinical trial, manufacturing and preclinical development costs primarily due to the costs associated with a Phase 2a clinical trial in 2013, and an increase in CAT-2054 preclinical development costs of $0.7 million, which were partially offset by a reduction of $2.3 million in CAT-1004 clinical trial, manufacturing and preclinical development costs due to completion of Phase 1 clinical trials in early 2013, and a reduction of $0.5 million in our general research and platform programs. In addition, the costs related to internal research and development increased by approximately $0.3 million, which was primarily attributable to an increase in employee costs including stock-based compensation expense, partially offset by a decrease of $0.2 million in consulting and other expenses.

General and Administrative Expenses

General and administrative expenses increased by $0.9 million to $4.1 million in 2013 from $3.3 million in 2012, an increase of 26%. The increase in general and administrative expenses was primarily attributable to increased employee costs of $0.5 million, primarily due to increased headcount, and an increase of $0.3 million in travel expenses, primarily related to fundraising activities.

Other Income

Other income for the years ended December 31, 2013 and 2012 consisted primarily of interest income and was materially consistent in both periods.

Liquidity and Capital Resources

Sources of Liquidity

From our inception through September 30, 2014, we have raised an aggregate of $85.7 million, of which $80.5 million consisted of gross proceeds from private placements of preferred stock and $5.0 million consisted of gross proceeds from a secured debt financing. As of September 30, 2014, we had $20.7 million in cash, cash equivalents and available-for-sale securities.

On August 27, 2014, we entered into a loan and security agreement, or the Credit Facility, with MidCap Financial SBIC and Square 1 Bank. The Credit Facility provides for initial borrowings of $5.0 million and additional borrowings of up to $20.0 million. Concurrently with entering into the Credit Facility, we borrowed $5.0 million under a term loan under the Credit Facility and we issued to the lenders warrants to purchase an aggregate of 157,844 shares of our Series B convertible preferred stock (157,844 shares of common stock on an as-converted basis) at an exercise price of $0.9503 per share. Of the additional $20.0 million available to us, $10.0 million is available to be drawn until March 31, 2015, subject to our issuance of warrants to purchase shares of our stock equal in value to 3% of the amount drawn. The remaining $10.0 million will be available to us subject to the completion of an initial public offering with net cash proceeds to us of at least $50.0 million until June 30, 2015, and also subject to our issuance of warrants to purchase shares of our stock equal in value to 3% of the amount drawn. All borrowings under the Credit Facility are due on October 1, 2018 and are collateralized by substantially all of our personal property, other than our intellectual property.

There are no financial covenants associated with the Credit Facility; however, there are negative covenants that prohibit us from transferring any of our material assets, exclusively licensing our intellectual property (subject to certain exceptions), merging with or acquiring another entity, entering into a transaction that would result in a change of control, incurring additional indebtedness, creating any lien on our property, making investments in third parties or redeeming stock or paying dividends.

The Credit Facility also includes events of default, the occurrence and continuation of any of which provides the lenders the right to exercise remedies against us and the collateral securing the loans under the Credit Facility, including cash. These events of default include, among other things, failure to pay amounts due under the Credit Facility, insolvency, the occurrence of a material adverse event, which includes a material adverse change in our business, operations or conditions (financial or otherwise) or a material impairment of the prospect of repayment of any portion of the obligations, the occurrence of any default under certain other indebtedness and a final judgment against us in an amount greater than $250,000. At September 30, 2014, we concluded that a material adverse change had not occurred.

We are obligated to make monthly interest-only payments on any term loans borrowed under the Credit Facility until September 1, 2015 and, thereafter, to pay 36 consecutive, equal monthly installments of principal and interest from October 1, 2015 through September 1, 2018. Term loans under the Credit Facility bear interest at an annual rate of 7.49%. Following the occurrence and during the continuance of an event of default, borrowings under the Credit Facility will bear interest at an annual rate that is 5.00% above the rate that is otherwise applicable. In addition, a final payment equal to 3.48% of any amounts drawn under the Credit Facility is due upon the earlier of the maturity date, acceleration of the term loans or prepayment of all or part of the term loans.

Cash Flows

The following table provides information regarding our cash flows for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands)			
Net cash used in operating activities	$ (15,583)	$ (16,366)	$ (12,097)	$ (14,492)
Net cash used in investing activities	(360)	(43)	(18)	(5,135)
Net cash provided by financing activities	8,746	41,449	9,186	4,828
Net (decrease) increase in cash and cash equivalents	$ (7,197)	$ 25,040	$ (2,929)	$ (14,799)

Net Cash Used in Operating Activities

Net cash used in operating activities was $14.5 million for the nine months ended September 30, 2014 and consisted primarily of a net loss of $15.9 million adjusted for non-cash items, including stock-based compensation expense of $0.6 million and depreciation and amortization expense of $0.2 million, and a net increase in operating assets of $0.6 million, which resulted primarily from a net increase in accounts payable and accrued expenses of $0.7 million partially offset by an increase in prepaid expenses and other current assets of $0.1 million.

Net cash used in operating activities was $12.1 million for the nine months ended September 30, 2013 and consisted primarily of a net loss of $13.2 million adjusted for non-cash items, including depreciation and amortization expense of $0.2 million and stock-based compensation expense of $0.2 million, and a net increase in operating assets of $0.7 million, which resulted primarily from a net increase in accounts payable and accrued expenses of $0.8 million partially offset by an increase in prepaid expenses and other current assets of $0.1 million.

Net cash used in operating activities was $16.4 million for the year ended December 31, 2013, and consisted primarily of a net loss of $18.1 million adjusted for non-cash items, including stock-based compensation expense of $0.3 million and depreciation and amortization expense of $0.3 million, and a net increase in operating assets of $1.1 million, which resulted primarily from a net increase in accounts payable and accrued expenses of $1.0 million and a decrease in prepaid expenses and other current assets of $0.1 million.

Net cash used in operating activities was $15.6 million for the year ended December 31, 2012, and consisted primarily of a net loss of $15.7 million adjusted for non-cash items, including depreciation and amortization expense of $0.3 million and stock-based compensation expense of $0.2 million, and a decrease in operating assets of $0.4 million, which resulted primarily from a net decrease in accounts payable and accrued expenses of $0.5 million.

Net Cash Used in Investing Activities

Net cash used in investing activities was $5.1 million during the nine months ended September 30, 2014 compared to $18,000 during the nine months ended September 30, 2013, primarily the result of $5.0 million invested in available-for-sale securities in the nine months ended September 30, 2014.

Net cash used in investing activities was $43,000 during the year ended December 31, 2013 compared to $0.4 million during the year ended December 31, 2012. The cash used in investing activities for the years ended December 31, 2013 and 2012 was primarily the result of purchases of property and equipment.

Net Cash Provided by Financing Activities

Net cash provided by financing activities was $4.8 million during the nine months ended September 30, 2014 compared to $9.2 million during the nine months ended September 30, 2013. The cash provided by financing activities for the nine months ended September 30, 2014 primarily consisted of gross proceeds of $5.0 million from our borrowings under the Credit Facility. The cash provided by financing activities for the nine months ended September 30, 2013 primarily consisted of net proceeds of $9.2 million from the issuance of 13,136,951 shares of Series A convertible preferred stock in January and June 2013.

Net cash provided by financing activities was $41.4 million during the year ended December 31, 2013 compared to $8.7 million during the year ended December 31, 2012. The cash provided by financing activities for the year ended December 31, 2013 consisted of net proceeds of $9.2 million from the issuance of 13,136,951 shares of Series A convertible preferred stock in January and June 2013, net proceeds of $32.2 million from the issuance of 34,129,571 shares of Series B convertible

preferred stock in October 2013 and proceeds received from stock option exercises. The cash provided by financing activities for the year ended December 31, 2012 consisted of net proceeds of $8.7 million from the issuance of 12,500,000 shares of series A convertible preferred stock in July 2012 and proceeds received from stock option exercises.

Funding Requirements

We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development of, and conduct clinical trials and seek marketing approval for, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements at least through 2016. We have based this estimate on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development of CAT-1004, our CAT-2000 series product candidates and our other current and potential product candidates, and because the extent to which we may enter into collaborations with third parties for the development of these product candidates is unknown, we are unable to estimate the amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates. Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of drug discovery, preclinical development, laboratory testing and clinical trials for our product candidates;
- the success of any future collaborations;
- the extent to which we acquire or in-license other medicines and technologies;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims; and
- our ability to establish and maintain collaborations on favorable terms, if at all.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of medicines that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. With the exception of the Credit Facility, we do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, our stockholders' ownership interests will be diluted, and the terms of these

securities may include liquidation or other preferences that adversely affect our stockholders' rights. Additional debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business.

If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations

The following table summarizes our significant contractual obligations as of payment due date by period at September 30, 2014:

	Payments due by period				
(In thousands)	Total	Less than 1 Year	1 - 3 Years	3 - 5 Years	More than 5 Years
Term loan(1)	$ 6,134	$ 384	$ 3,850	$ 1,909	$ —
Operating lease obligations(2)	2,081	753	1,325	—	—
Total contractual cash obligations	$ 8,224	$ 1,137	$ 5,178	$ 1,909	$ —

(1) Consists of repayment obligations under the Credit Facility, including interest.

(2) Represents future minimum lease payments under our non-cancelable operating lease. The minimum lease payments above do not include any related common area maintenance charges or real estate taxes.

We enter into agreements in the normal course of business with CROs for clinical trials and clinical supply manufacturing and with vendors for preclinical research studies and other services and products for operating purposes. We have not included these payments in the table of contractual obligations above since the contracts are cancelable at any time by us, generally upon 30 days prior written notice to the CRO, and therefore we believe that our non-cancelable obligations under these agreements are not material.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under applicable Securities and Exchange Commission rules.

Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk related to changes in interest rates. As of December 31, 2013, we had cash and cash equivalents of $30.5 million and, as of September 30, 2014, we had cash, cash equivalents and available-for-sale investments of $20.7 million, consisting primarily of investments in U.S. Treasury securities and U.S. Government-backed securities. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments are in short-term marketable securities. Our marketable securities are subject to interest rate risk and could fall in value if market interest rates increase. Due to the

short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of our investment portfolio. We have the ability to hold our marketable securities until maturity, and therefore we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a change in market interest rates on our investments.

As of December 31, 2013 and September 30, 2014, we had no liabilities denominated in foreign currencies.

BUSINESS

Overview

We are a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutics based on our proprietary Safely Metabolized And Rationally Targeted, or SMART, linker technology platform. Our SMART linker technology platform is based on the concept of treating diseases by simultaneously modulating multiple targets in one or more related disease pathways. We engineer bi-functional product candidates that are conjugates of two molecules, or bioactives, each with known pharmacological activity, joined by one of our proprietary SMART linkers. Our SMART linker conjugates are designed for enhanced efficacy and improved safety and tolerability. Our initial focus is on treatments for orphan diseases, such as Duchenne muscular dystrophy, or DMD. We are also developing other product candidates for the treatment of serious lipid disorders. We have applied our SMART linker technology platform to build a development pipeline that includes three-clinical stage product candidates and multiple programs in preclinical development.

Our lead product candidate, CAT-1004, is an oral small molecule that we believe has the potential to be a disease-modifying therapy for the treatment of DMD, a fatal genetic disorder involving progressive muscle degeneration. CAT-1004 is a SMART linker conjugate of salicylate and the omega-3 fatty acid docosahexaenoic acid, or DHA, that we designed to enhance the activity of salicylate and DHA in modulating the NF-kB pathway at multiple points. NF-kB, or nuclear factor kappa-light-chain-enhancer of activated B cells, is a protein that coordinates cellular response to damage, stress and inflammation and plays an important role in muscle health. In skeletal muscle, activated NF-kB drives muscle degeneration and suppresses muscle regeneration. Chronic activation of NF-kB has been reported in multiple skeletal muscle disorders, including muscular dystrophies, atrophy and inflammatory myopathies. In animal models of DMD, CAT-1004 inhibited activated NF-kB, reduced muscle inflammation and degeneration and increased muscle regeneration. In Phase 1 clinical trials, CAT-1004 inhibited NF-kB and was well tolerated with no observed safety concerns. We plan to initiate a Phase 1/2 clinical trial of CAT-1004 for the treatment of DMD in the first half of 2015 and expect to report top-line Phase 2 data in mid-2016. If the results from our Phase 1/2 clinical trial are positive, we intend to conduct a single six-month Phase 3 pivotal clinical trial in order to seek marketing approval. The U.S. Food and Drug Administration, or FDA, has granted CAT-1004 orphan drug designation for the treatment of DMD. We hold worldwide rights to CAT-1004.

Our two other clinical-stage product candidates, CAT-2003 and CAT-2054, are members of our CAT-2000 series. This series of compounds consists of oral small molecule product candidates that modulate the Sterol Regulatory Element Binding Protein, or SREBP, pathway. SREBP is a master regulator of lipid metabolism and controls the metabolism of both triglycerides and low density lipoprotein cholesterol, or LDL-C.

CAT-2003 is an orally administered SMART linker conjugate of the omega-3 fatty acid eicosapentaenoic acid, or EPA, and nicotinic acid that we designed to modulate the SREBP pathway in the intestine. We are developing CAT-2003 for the treatment of patients with multifactorial chylomicronemia syndrome, or MFC, and refractory severe hypertriglyceridemia, or rSHTG, diseases involving extremely elevated triglyceride levels that significantly increase the risk of pancreatitis. In Phase 2 clinical trials, CAT-2003 demonstrated clinically meaningful reductions in triglyceride levels and improvement in other cardio-metabolic risk factors, including glycated hemoglobin, or HbA1c, which is a measure of glucose levels over time, and LDL-C. We are currently conducting a Phase 2a clinical trial of CAT-2003 for the treatment of MFC and rSHTG and expect to report top-line data in the second quarter of 2015. We hold worldwide rights to CAT-2003 and we may seek to commercialize CAT-2003 through one or more collaborations.

CAT-2054, similar to CAT-2003, is an orally administered SMART linker conjugate of EPA and nicotinic acid that we have designed to modulate the SREBP pathway. However, unlike CAT-2003,

which we designed to be active in cells in the intestine, we designed CAT-2054 to be active in cells in the liver. By modulating the SREBP pathway in the liver, CAT-2054 may inhibit production of important cholesterol metabolism proteins, such as proprotein convertase subtilisin kexin 9, or PCSK9, 3-hydroxy-3-methyl-glutaryl-CoA reductase, or HMG-CoA reductase, and adenosine triphosphate citrate lyase, or ATP citrate lyase. We are developing CAT-2054 for the treatment of hypercholesterolemia, or elevated LDL-C levels, a disease that increases the risk of cardiovascular events. In January 2015, we initiated a Phase 1 clinical trial to assess the safety, tolerability and pharmacokinetics of CAT-2054 in healthy volunteers. If the results of this clinical trial are positive, we intend to initiate a Phase 2 clinical trial for the treatment of hypercholesterolemia in the fourth quarter of 2015. We hold worldwide rights to CAT-2054 and we intend to seek to commercialize CAT-2054 through one or more collaborations.

CAT-4001, our most advanced preclinical product candidate, is a SMART linker conjugate of monomethyl fumarate and DHA. CAT-4001 is a small molecule that activates the Nrf2 pathway and inhibits activated NF-kB. Nrf2, or Nuclear factor erythroid-derived 2-like 2, is a gene transcription factor that controls the body's response to cellular stress and oxidative damage. CAT-4001 is in preclinical studies for the treatment of amyotrophic lateral sclerosis, or ALS, and Friedreich's ataxia. ALS and Friedreich's ataxia are rare degenerative diseases of the central nervous system in which the Nrf2 and NF-kB pathways have been implicated. We plan to conduct preclinical studies of CAT-4001 in 2015, and if the results of these preclinical studies are positive we intend to advance CAT-4001 into a Phase 1 clinical trial in 2016. We hold worldwide rights to CAT-4001.

As of December 31, 2014, we owned two issued U.S. patents relating to composition of matter and method of use claims directed to CAT-1004 and two issued U.S. patents relating to composition of matter and method of use claims directed to the CAT-2000 series. These patents are expected to expire between 2029 and 2031, without taking potential patent term extensions into account. In addition, our patent portfolio includes over 10 issued foreign patents, over 25 pending U.S. patent applications and over 100 pending foreign patent applications.

Our Strategy

Our objective is to apply our proprietary SMART linker technology platform to discover, develop and commercialize novel bi-functional therapeutics, with an initial focus on orphan diseases. To achieve our goals, we are pursuing the following strategies:

- *Complete the development of CAT-1004 through registration for DMD.* We are devoting a significant portion of our resources to developing our lead product candidate, CAT-1004, for the treatment of DMD. We plan to initiate a Phase 1/2 clinical trial of CAT-1004 for the treatment of DMD in the first half of 2015 and expect to report top-line Phase 2 data in mid-2016. If the results from our Phase 1/2 clinical trial are positive, we intend to conduct a single six-month Phase 3 pivotal clinical trial in order to seek marketing approval. Our goal is to develop the first disease-modifying oral therapy for the treatment of DMD that promotes muscle regeneration.

- *Advance the development of our CAT-2000 series product candidates.* We have completed two Phase 2a clinical trials, and have one ongoing Phase 2a clinical trial, of CAT-2003 in patients with hypertriglyceridemia. In January 2015, we initiated a Phase 1 clinical trial of CAT-2054 to assess its safety, tolerability and pharmacokinetics in healthy volunteers. Based on the results of these clinical trials, we intend to advance the development of one or both of CAT-2003 and CAT-2054.

- *Continue to apply our SMART linker technology platform to expand our development pipeline.* We have used our SMART linker technology platform to rapidly and efficiently identify product candidates that we have been able to advance into clinical development. We are continually advancing our conjugation capabilities and exploring new applications of our technology platform to develop bi-functional therapeutics to treat diseases that we believe can be effectively

addressed by modulating multiple targets in one or more related disease pathways. We have a goal of identifying at least one novel SMART linker conjugate per year that we can advance into preclinical development.

- *Maintain flexibility in commercializing and maximizing the value of our development programs.* We plan to build focused capabilities in the United States and Canada to commercialize development programs, such as CAT-1004 for DMD, where we believe that the medical specialists for the indications are sufficiently concentrated to allow us to effectively promote the product with a targeted sales team. We also intend to enter into strategic relationships with biotechnology and pharmaceutical companies where realizing the full value of our development programs will require access to broader geographic markets or the pursuit of broader patient populations or indications, such as with the CAT-2000 series and the commercialization of CAT-1004 outside of the United States and Canada. In addition, we intend to expand the drug development applications of our SMART linker technology platform through selective collaborations with leading biotechnology and pharmaceutical companies.

Our Scientific Approach

Our SMART linker technology platform is based on the concept of treating diseases by simultaneously modulating multiple targets in one or more related disease pathways. The traditional model for drug discovery has focused on identifying and evaluating drug candidates with the goal of modifying a single biological target implicated in a specific disease process. This approach of selecting a single bioactive to modulate a single target has been successful for certain types of diseases. However, many diseases are caused by multiple abnormalities rather than by a single defect. In these cases, the traditional single-target approach to drug discovery and development may be less effective because a single target may not address the multiple underlying defects causing the disease.

Multi-target therapies have in many cases been developed to provide treatment options where single-target therapies have been ineffective. These multi-target therapies have traditionally followed one of two approaches: either use of a single drug that binds to multiple biological targets or co-administration of two or more drugs that interact with different targets. While each of these approaches has well-established benefits in a variety of indications, each is also characterized by significant limitations. For example, use of a single broadly targeted drug can lead to off-target toxicities, side-effects and tolerability issues, and co-administration of two or more drugs can be confounded by differences in the pharmacokinetics and tissue distribution of the drugs, thereby reducing the likelihood of each agent being simultaneously active in the same cell.

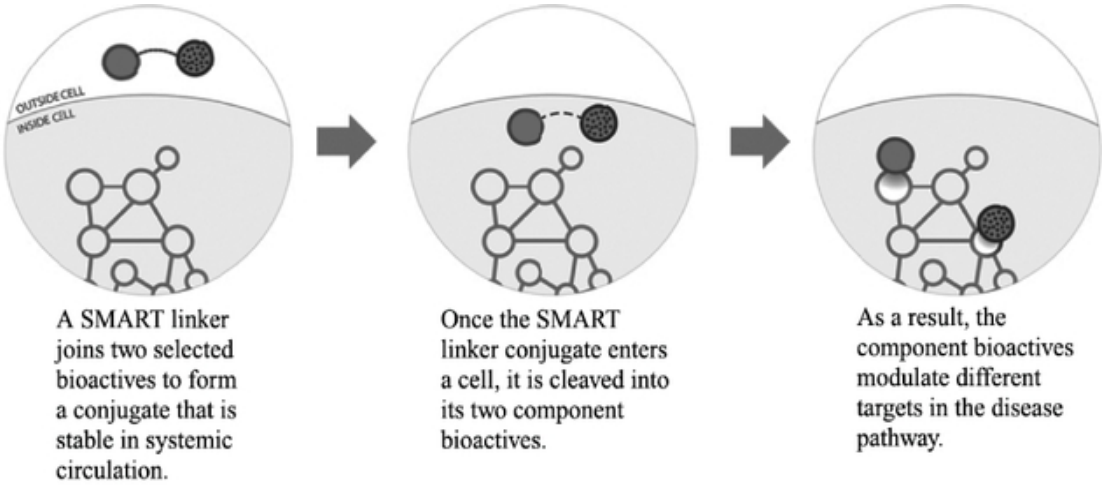
Our aim is to leverage the growing body of knowledge associated with disease pathways, and to rationally design orally bioavailable product candidates that simultaneously interact with multiple biological targets within one or more related disease pathways. While other technologies exist to conjugate or combine two bioactives, we believe that our SMART linker technology platform provides substantial improvements over previous approaches to bioactive conjugation.

SMART Linker Technology Platform

We have developed our SMART linker technology platform to create molecules that simultaneously modulate multiple biological targets within one or more related disease pathways. The linkers used in our technology platform are small chemicals designed to join two separate bioactives into a single conjugate molecule. In systemic circulation, our SMART linker conjugates are stable and inactive, potentially reducing off-target toxicities and side-effects. The conjugates are designed to be cleaved by specific enzymes exclusively within cells in order to release the two bioactives inside the cells. By releasing the bioactive components of the conjugate molecule only inside cells, the SMART linker allows the bioactives to reach their targets more efficiently and have greater efficacy than if the

bioactives were dosed independently or in combination. The stability of our SMART linker conjugates outside of cells and the release of the bioactives exclusively within cells are differentiating features of our SMART linker technology platform.

To create a conjugate using our SMART linker technology platform, we begin by analyzing pathways that are disrupted in a disease. We then select two bioactive molecules known for their clinical safety and demonstrated effect along one or more of these biological pathways. We then design a SMART linker that will conjugate the two selected bioactives, allow the conjugate to be carried to biological tissues and, following entry into cells, be cleaved by enzymes resident in the cells to release the bioactives, as shown in the figures below.



Our SMART linker conjugates are designed to be stable to oral dosing, as well as stable in both the lumen of the intestine and in systemic circulation. We design the SMART linker to chemically link the two bioactive molecules through their pharmacophores, the regions of the bioactive molecules that are responsible for carrying out their biological activity, resulting in inactivation of the bioactives. Once the conjugate enters a cell, the SMART linker is cleaved by specific enzymes which reside only within cells, releasing the two bioactives to interact with their biological targets. Delivery of the bioactives through the SMART linker conjugate into the cell results in the two bioactives having the same pharmacokinetics and tissue distribution. As a result, our SMART linker conjugates can simultaneously modulate two biological targets in disease pathways of interest within the same cell. In addition, release of the bioactives exclusively inside cells can potentially reduce or eliminate off-target, extracellular activity of the bioactives, which may improve safety and tolerability.

We have observed in multiple preclinical studies that our SMART linker conjugates achieved greater efficacy than administration of the two bioactives either independently or in combination. In clinical trials, SMART linker conjugates have demonstrated significant improvements in activity on disease pathways and tolerability relative to equivalent doses of the two bioactives delivered in combination. We also have observed clinically meaningful efficacy with SMART linker conjugates at dose levels significantly lower than the prescribed doses of the two component bioactives.

We believe our SMART linker technology platform has the potential to:

- enhance activity on disease pathways through modulation of multiple biological targets;
- improve efficacy by matching the pharmacokinetics and tissue distribution of the component bioactives; and
- improve safety and tolerability by releasing the component bioactives only within cells.

Our Product Candidates

The following chart summarizes key information regarding our product candidates. We hold worldwide rights to all of our product candidates.

Product Candidate	Indication	Target	Pre-clinical	Phase 1	Phase 2	Phase 3	Anticipated Milestones
CAT-1004	• Duchenne Muscular Dystrophy	NF-κB					• Expect to initiate Phase 1/2 trial in the first half of 2015
CAT-2003	• Refractory Severe Hypertriglyceridemia • Multifactorial Chylomicronemia	SREBP					• Expect to complete Phase 2a trial in the second quarter of 2015
CAT-2054	• Hypercholesterolemia	SREBP					• Expect to complete Phase 1 trial in the third quarter of 2015 • Expect to initiate Phase 2a trial in the fourth quarter of 2015
CAT-4001	• Amyotrophic Lateral Sclerosis • Friedreich's Ataxia	NRF2/ NF-κB					• Expect to initiate Phase 1 trial in 2016

CAT-1004

We are developing CAT-1004 for the treatment of DMD. CAT-1004 is an orally administered SMART linker conjugate of salicylate and DHA that we designed to enhance the activity of salicylate and DHA in modulating the NF-kB pathway at multiple points. Emerging data suggest that activation of NF-kB drives the loss of skeletal muscle mass in multiple diseases, including muscular dystrophies, atrophy and inflammatory myopathies. The FDA has granted CAT-1004 orphan drug designation for the treatment of DMD and we plan to submit an orphan drug designation request to the European Medicines Agency, or EMA, in the second half of 2015. In December 2014, we submitted an investigational new drug application, or IND, to the FDA for CAT-1004 for DMD. We plan to initiate a Phase 1/2 clinical trial of CAT-1004 for the treatment of DMD in the first half of 2015 and expect to report top-line Phase 2 data in mid-2016. If the results from our Phase 1/2 clinical trial are positive, we intend to conduct a single six-month Phase 3 pivotal clinical trial in order to seek marketing approval. We believe that CAT-1004 has the potential to be the first disease-modifying oral therapy for the treatment of DMD that promotes muscle regeneration.

Overview of DMD

DMD is a rare pediatric disorder involving progressive muscle degeneration that eventually leads to death. DMD is caused by various mutations in the dystrophin gene that result in a lack of functional dystrophin in muscle fibers. Dystrophin is a protein that resides in the membrane of muscle cells and is critical to the structural and membrane stability of muscle fibers in skeletal, diaphragm and heart muscle. When muscles contract or stretch during normal use, the absence of normally functioning dystrophin results in activation of the NF-kB pathway, triggering inflammation in the muscles, resulting in muscle damage and reducing the ability of muscles to regenerate. As muscle damage progresses, connective and adipose tissues replace muscle fibers, resulting in inexorable muscle weakness.

DMD occurs almost exclusively in males, occurring in approximately 1 in 3,500 live male births. Based on this incidence rate, we estimate that DMD affects a total of approximately 15,000 patients in the United States and approximately 19,000 patients in the European Union.

Children with DMD typically begin to show symptoms of disease between ages two and five, when they develop a waddling gait, frequently fall and have difficulty rising from the floor. Progressive weakness then develops in the voluntary muscles in the arms, legs and trunk. This muscle weakness results in fixations, or contractures, of joints, such as knees, hips and elbows. By age eight, most patients have difficulty ascending stairs. By their early teens, patients typically lose walking ability and are confined to wheelchairs. Patients' cardiac and respiratory muscles are also adversely affected, typically requiring use of ventilators in their late teens. Progressive weakening of cardiac and respiratory muscles eventually results in death, generally by patients' mid-twenties.

Unaddressed Market Opportunity

There are no therapies approved for the treatment of DMD in the United States. Corticosteroid therapy is often prescribed to treat the inflammation underlying DMD and to delay loss of ambulation. Corticosteroids have demonstrated efficacy in DMD patients that are believed to be driven by reductions in activated NF-kB. However, corticosteroids also can cause significant complications due to systemic toxicities, including growth suppression, reduction in bone strength and compromise of the immune system. Over time, corticosteroids induce chronic myopathy in many diseases through induction of muscle protein breakdown, which ultimately leads to muscle damage. DMD patients treated with corticosteroids typically show an initial improvement in measures of muscle function but then resume a progressive decline. Approximately half of DMD patients treated with steroids lose the ability to walk by age eleven and almost all are in wheelchairs by age sixteen. DMD patients typically live until their mid-twenties, despite availability of corticosteroids.

Several companies are exploring new therapies for the treatment of DMD. The three most advanced product candidates, PTC Therapeutics' ataluren, Prosensa's drisapersen and Sarepta's eteplirsen, target mechanisms to increase levels of dystrophin in muscles. Each of these product candidates compensates for a specific mutation to produce a partially functional dystrophin protein. The therapeutic goal of these product candidates is to reduce disease severity and extend survival in those DMD patients with the specific mutation. Based on the prevalence of the specific mutations that these product candidates are designed to address, they would be expected to be effective in an aggregate of approximately 26% of DMD patients. We believe that DMD patients treated with these dystrophin therapies will continue to require treatments to reduce muscle inflammation and enhance muscle regeneration. PTC Therapeutics has received conditional approval for ataluren in the European Union for DMD patients with a specific type of mutation. PTC Therapeutics and Prosensa each have begun a rolling new drug application, or NDA, submission for marketing approval in the United States while Sarepta has announced that it intends to submit an NDA in 2015. Several other product candidates in development also target either inflammation and fibrosis associated with DMD or muscle regeneration. The most advanced of these product candidates is Pfizer's monoclonal antibody targeting myostatin, which is in a Phase 2 clinical trial.

The Role of NF-kB in Duchenne Muscular Dystrophy

NF-kB has an important role in regulating skeletal muscle health and appears to be especially important in regulating skeletal muscle mass in chronic diseases such as DMD. In addition, activated NF-kB promotes the degradation of specific muscle proteins, leads to the induction of pro-inflammatory mediators such as cytokines, chemokines, cell adhesion molecules and tissue degrading enzymes and suppresses muscle stem cell differentiation that is required for muscle regeneration. Activation of NF-kB is observed in muscle tissues of patients with DMD prior to the onset of other clinical manifestations, and activated NF-kB is persistently elevated in the immune cells and degenerating muscle fibers of patients with DMD. Moreover, mechanical stress activates NF-kB mediated inflammation, and muscles with increased damage and inflammation, such as quadriceps and hamstrings, show the greatest progression of disease.

CAT-1004 for the Treatment of Duchenne Muscular Dystrophy

CAT-1004 is a SMART linker conjugate of salicylate and DHA that we designed to enhance the activity of salicylate and DHA in modulating the NF-kB pathway at multiple points. Based on its mechanism of action in suppressing activated NF-kB, we believe that CAT-1004 has the potential to combine reduction of inflammation, adipose tissue infiltration and muscle degeneration with positive effects on muscle regeneration, all of which may allow patients to retain muscle function longer. In addition, we believe that CAT-1004 has the potential to be effective in all DMD patients, regardless of the underlying mutation, and provide significant benefit to patients, both as monotherapy and when used in combination with other therapies, including dystrophin-targeted therapies and agents targeting myostatin.

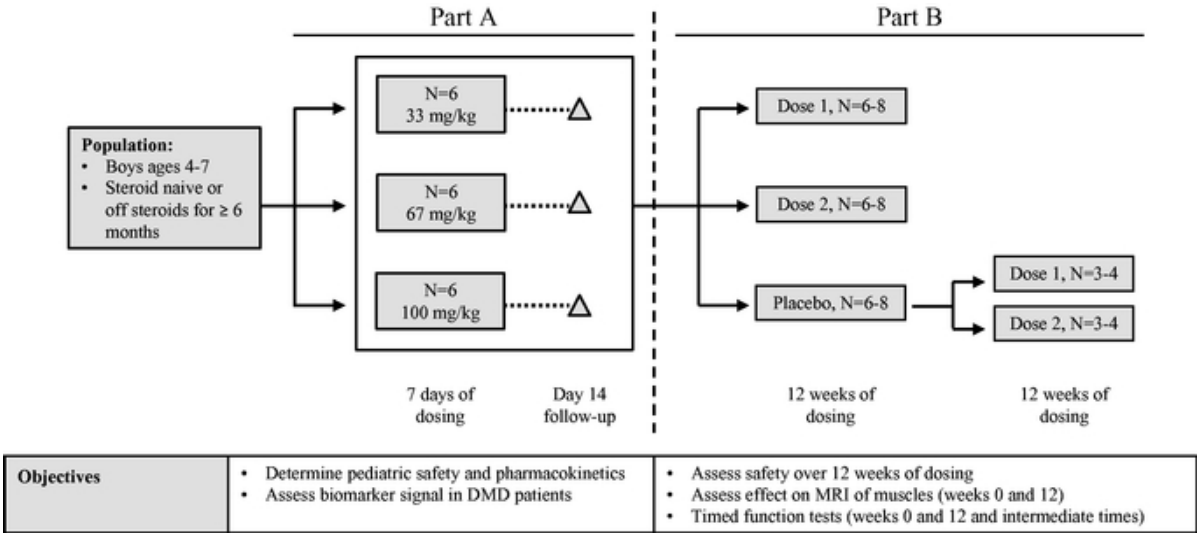
In Phase 1 clinical trials in healthy volunteers, CAT-1004 was observed to be safe and well tolerated and inhibited activated NF-kB. Based on the positive effects observed in the Phase 1 trials and in animal studies, we plan to initiate a Phase 1/2 clinical trial in patients with DMD in the first half of 2015.

CAT-1004 Clinical Development

Planned Phase 1/2 Trial of CAT-1004 in Patients with DMD

We have designed a CAT-1004 Phase 1/2 clinical trial that we plan to initiate in the first half of 2015. The planned CAT-1004 Phase 1/2 trial will enroll ambulatory boys between ages four and seven with a genetically confirmed diagnosis of DMD. The enrolled boys will be steroid naive or have not used steroids for at least six months prior to the trial. We will conduct the trial at multiple sites in the United States. We plan to conduct the Phase 1/2 trial in two sequential parts, Part A and Part B, as illustrated in the following diagram.

CAT-1004 Planned Phase 1/2 Trial Design



In Part A, we will assess the safety, tolerability and pharmacokinetics of CAT-1004 in patients at three dosing levels following seven days of dosing and assess NF-kB biomarker activity for each dose group. In Part B of the trial, we plan to treat patients with one of two dosing levels of CAT-1004 or placebo for 12 weeks. After 12 weeks of dosing, patients receiving placebo may be crossed over to one of two doses of CAT-1004 for an additional 12 weeks. We anticipate that the primary endpoint will be changes in magnetic resonance imaging, or MRI, of leg muscles as a biomarker for inflammation, which is known to increase with age in DMD patients but is observed to decrease with initiation of steroid therapy. We plan to include timed function tests best suited for this age group as exploratory endpoints, specifically the 10 meter walk/run, time to stand and 4-stair climb tests. In addition, assessments of muscle strength and a parent-proxy measure of functional ability will be included. We expect to report top-line Phase 2 data from this trial in the first half of 2016. If the results of this Phase 1/2 clinical trial are positive, we intend to conduct a single six-month Phase 3 pivotal clinical trial in order to seek marketing approval.

Completed Clinical Trials

To date, we have studied CAT-1004 in three completed Phase 1 clinical trials. The design and results for these clinical trials are discussed below.

CAT-1004—Completed Phase 1 Clinical Trials

Trial	Description	Duration	Subjects	
			Total	Treated
CAT-1004-101	First-in-human, randomized, double-blind, placebo-controlled, single ascending dose clinical trial to evaluate safety, tolerability and pharmacokinetics of CAT-1004 in healthy subjects	1 day	52	39
CAT-1004-102	Randomized, double-blind, placebo-controlled multiple ascending dose clinical trial to evaluate safety, tolerability, pharmacokinetics and pharmacodynamics of CAT-1004 in adults with Type 2 diabetes	14 days	44	32
CAT-1004-103	Single-blind NF-kB biomarker trial to compare activity on NF-kB of placebo, CAT-1004 or a combination of salicylate and DHA in healthy subjects	1 day	9	8

Phase 1 Single Ascending Dose Trial (CAT-1004-101): We conducted a randomized, double-blind, placebo-controlled, single ascending dose Phase 1 clinical trial in 52 healthy volunteers at a single site in the United States to assess the safety, tolerability and pharmacokinetics of CAT-1004 in both fasted and fed states. The participants were randomized to receive CAT-1004 or placebo. CAT-1004 was administered orally in soft gelatin capsules at doses ranging from 300 mg to 6000 mg.

Single doses of CAT-1004, administered to subjects in both fed and fasted conditions appeared to be safe and well tolerated. Subjects in the fasted state reported few adverse events, or AEs, with the most commonly reported AEs being headache, diarrhea and dizziness. The majority of the AEs in the fasted state were mild in severity. The most common AEs in the fed state were diarrhea, headache and abdominal pain and all of the AEs in the fed state were mild in severity. Subjects in the fed state receiving single doses of CAT-1004 of 4000 mg or more reported gastrointestinal adverse events more frequently than subjects receiving lower doses. There were no observed trends in laboratory, vital signs or electrocardiogram results following CAT-1004 administration in either the fasted or fed state.

CAT-1004 was rapidly absorbed in plasma, with mean maximum and overall plasma exposure generally increasing with CAT-1004 dose levels. Neither component bioactive, salicylate or DHA, was detected in plasma at levels above background, consistent with intracellular cleavage of CAT-1004 and intracellular delivery of the component bioactives. Administration of a high-fat meal increased CAT-1004 mean maximum and overall exposure by approximately 3- to 8-fold.

Phase 1 Multiple Ascending Dose Trial (CAT-1004-102): We conducted a randomized, double-blind, placebo-controlled, multiple ascending dose Phase 1 clinical trial in 44 subjects at a single center in the United States to assess the safety, tolerability, pharmacokinetics and pharmacodynamics of CAT-1004. These subjects had Type 2 diabetes and mild background inflammation, which enabled us to assess the activity of CAT-1004 on activated NF-kB. Subjects were randomized to receive CAT-1004 or placebo. CAT-1004 was administered orally in soft gelatin capsules at total daily doses ranging from 300 mg to 4000 mg.

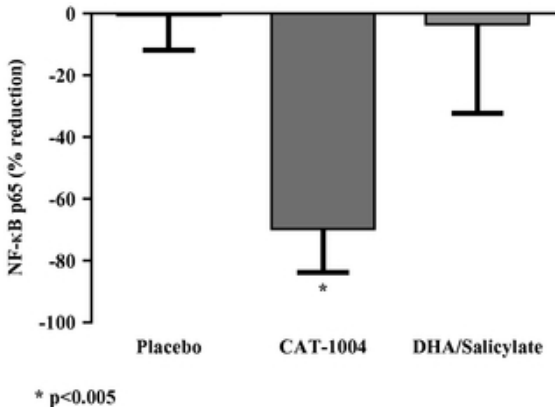
CAT-1004 administered for two weeks appeared to be safe and well tolerated. The AEs reported in more than one patient were diarrhea, gastroenteritis and upper respiratory tract infection. The majority of the AEs were mild in severity.

CAT-1004 was rapidly absorbed in plasma, with mean maximum and overall plasma exposure generally increasing with escalating single or multiple doses of CAT-1004. Neither component bioactive, salicylate or DHA, was detected in plasma at levels above background, again consistent with intracellular cleavage of CAT-1004 and intracellular delivery of the component bioactives.

In the Phase 1 multiple ascending dose trial, we observed by two methods that CAT-1004 inhibited activated NF-kB. For the first method, we stimulated NF-kB activity *ex vivo* in whole blood from subjects treated with CAT-1004 or placebo, and then observed NF-kB activity in monocytes, or immune cells, that we isolated from the whole blood. NF-kB activity was reduced in a majority of subjects following two weeks of CAT-1004 treatment but not following treatment with placebo. For the second method, we performed gene expression analyses on whole blood taken from subjects prior to treatment and after two weeks of treatment with CAT-1004 or placebo. CAT-1004 significantly reduced the expression of a set of genes that are controlled by NF-kB. In contrast, treatment with placebo for two weeks did not significantly reduce expression of NF-kB regulated genes.

Phase 1 NF-kB Biomarker Trial (CAT-1004-103): We conducted a single-blind, crossover Phase 1 clinical trial with CAT-1004 in nine healthy volunteers at a single center in the United States to compare activity of CAT-1004 on activated NF-kB to a combination of salicylate and DHA or placebo. The salicylate and DHA were dosed at approximately equivalent amounts to those contained in the CAT-1004 conjugate. We assessed NF-kB activity in peripheral blood mononuclear cells, or PBMCs, isolated from subjects before dosing and two hours after dosing. PBMCs are circulating immune cells that can mount an NF-kB response and migrate into tissue such as muscle and drive inflammation. Prior to the determination of NF-kB activity, we stimulated whole blood with lipopolysaccharide, or LPS, to activate the NF-kB pathway. As shown in the graph below, treatment of subjects with CAT-1004 significantly reduced the level of activated NF-kB, as measured by nuclear p65, a surrogate marker for activated NF-kB. In contrast, no change in the level of activated NF-kB was observed upon treatment with the combination of salicylate and DHA, or upon treatment with placebo. We believe that this suggests that CAT-1004, which is a SMART linker conjugate of salicylate and DHA, exhibits greater activity on the NF-kB pathway than the combination of its component bioactives.

Effect of CAT-1004 on Activated NF-kB



These results were statistically significant, with a p-value of less than 0.005. P-value is a conventional statistical method for measuring the statistical significance of clinical results. A p-value of 0.05 or less represents statistical significance, meaning that there is a 1-in-20 or less likelihood that the observed results occurred by chance.

CAT-1004 Preclinical Development

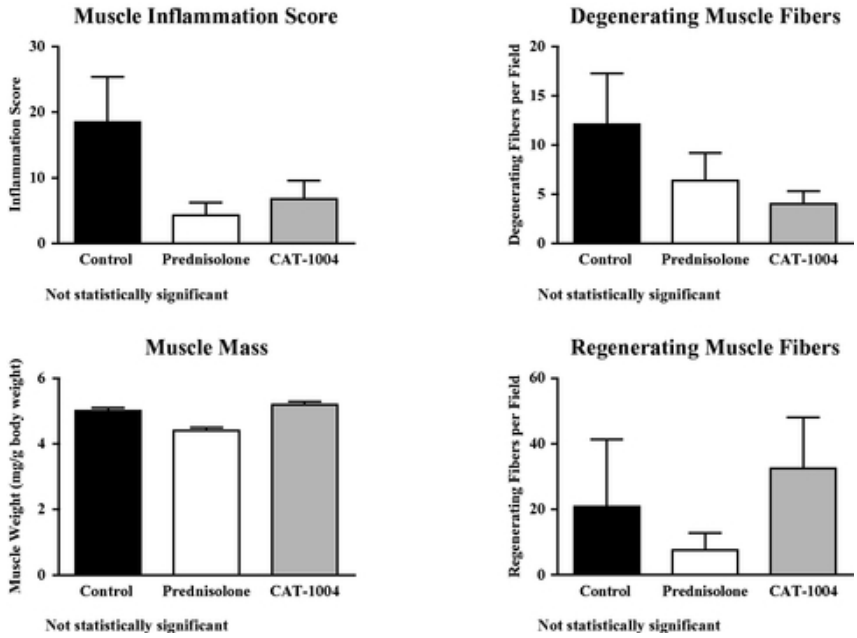
In preclinical studies, we have observed that CAT-1004 inhibited NF-kB activity *in vitro* and *in vivo*, and produced disease-modifying effects in two established animal models of DMD, the *mdx* mouse model and the Golden Retriever muscular dystrophy dog model.

In Vivo Studies in Animal Models of DMD

We have created several SMART linker conjugates that inhibit activated NF-kB. Two of these conjugates, CAT-1004 and CAT-1041, exhibit very similar effects on NF-kB activity in cell based assays and in animal studies. CAT-1041 is a closely related analog of CAT-1004 in which the DHA component of the salicylate-DHA conjugate has been replaced with EPA. In some preclinical studies, we have used CAT-1041 as a surrogate for CAT-1004. Both CAT-1004 and CAT-1041 produced disease-modifying efficacy in established animal models of DMD. We decided to advance CAT-1004 into clinical trials rather than CAT-1041 based on scientific literature suggesting that DHA has superior anti-inflammatory activity compared to EPA.

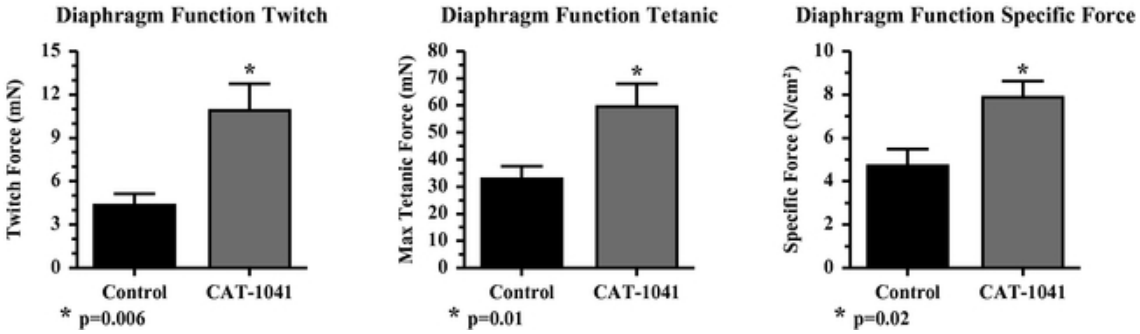
Mdx Mouse Model. We examined the potential therapeutic effects of CAT-1004 using the *mdx* mouse model of DMD. As shown in the graphs below, we observed that four weeks of treatment with CAT-1004 or prednisolone, a steroid, reduced muscle inflammation and the number of degenerating muscle fibers in *mdx* mice. However, only CAT-1004-treated animals showed preservation of muscle mass and an increase in the number of regenerating fibers, suggesting that chronic treatment with CAT-1004 can protect muscle from the damage expected to occur over time in *mdx* mice. In this study, muscle inflammation score was based on the number of infiltrating immune cells within a fixed-size slide image, or field, and degenerating muscle fibers and regenerating muscle fibers were based on a count within the field.

CAT-1004 Activity in the mdx Mouse Model



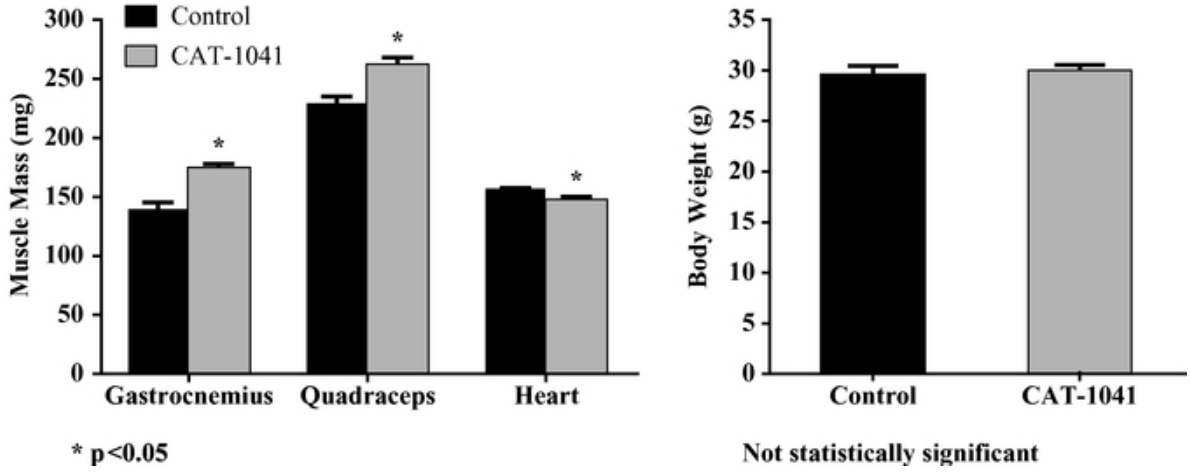
In a long-term *mdx* mouse study, we observed that, compared to the control group of *mdx* mice, six months of treatment with CAT-1041 significantly improved muscle endurance as measured by mean weekly and total running distance. As shown in the graphs below, improvements in muscle endurance following CAT-1041 treatment versus control were also observed in post-mortem assessments of twitch force, tetanic force and specific force generation, each of which is an established measurement of muscle endurance, in excised diaphragm muscle.

CAT-1041 Activity on Diaphragm Function in the mdx Mouse Model



As shown in the graphs below, we also observed in this same study that *mdx* mice treated with CAT-1041 showed significantly increased mass of two major leg muscles, the gastrocnemius and quadriceps, independent of changes in total body weight. CAT-1041-treated mice also had a statistically significant reduction in heart mass, suggesting that chronic treatment with CAT-1041 may have reduced the dilated cardiomyopathy typically observed in *mdx* mice.

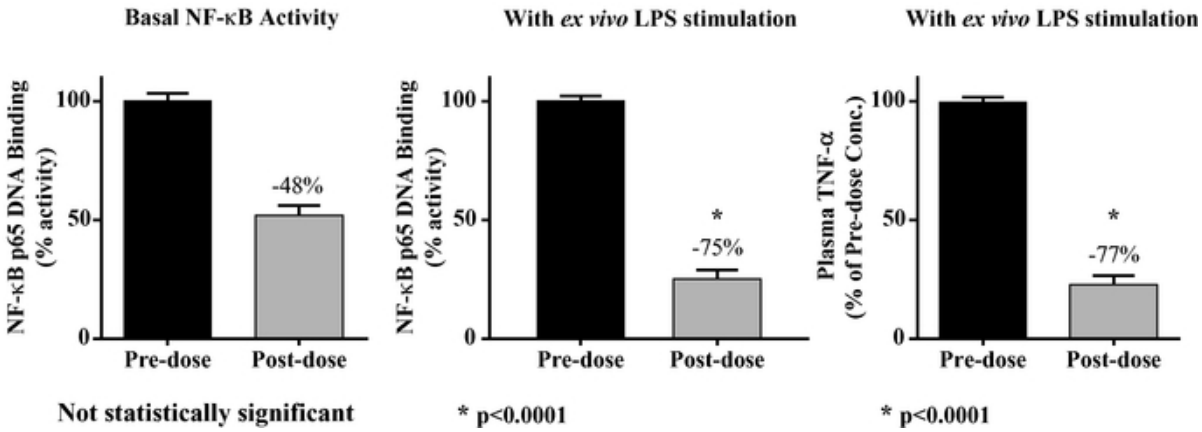
CAT-1041 Activity on Muscle Mass and Body Weight in the mdx Mouse Model



Finally, in this study we observed a reduction in diaphragm and quadricep muscle fibrosis in *mdx* mice treated with CAT-1041 in comparison to control.

Golden Retriever Dog Model. We also evaluated the effects of CAT-1004 in the Golden Retriever muscular dystrophy, or GRMD, dog model. As shown in the graph below, a single oral dose of CAT-1004 inhibited basal, or unstimulated, NF-kB activity by 48% in GRMD dogs. CAT-1004 also inhibited LPS-stimulated NF-kB activity by 75% and LPS-stimulated plasma levels of TNFa protein, a key marker of inflammatory response, by 77%. Together, these data suggest that a single oral dose of CAT-1004 achieves sufficient exposure levels to inhibit activated NF-kB in a dog model of DMD.

Effect of CAT-1004 on NF-kB in the GRMD Dog Model



In Vitro Studies

In an *in vitro* study in a mouse macrophage cell line, we observed that CAT-1004 inhibited LPS-stimulated NF-kB activity to a greater extent than either of its components, salicylate and DHA, alone or in combination. We also observed that CAT-1004 inhibited LPS-stimulated NF-kB activity in human PBMCs, which are a potential target tissue for CAT-1004. In studies performed with a mouse macrophage cell line, CAT-1004 reduced the LPS-stimulated expression of a set of genes that encode pro-inflammatory mediators and whose expression is controlled by NF-kB.

CAT-2003

CAT-2003 is an orally administered SMART linker conjugate of EPA and nicotinic acid that we designed to modulate the SREBP pathway in the intestine. SREBP is a master regulator of lipid metabolism and controls levels of both triglycerides and LDL-C. In particular, CAT-2003 is designed to be cleaved primarily in cells of the small intestine to target triglyceride synthesis and is being developed for the treatment of MFC and rSHTG. Both of these diseases involve extremely elevated triglyceride levels that significantly increase the risk of pancreatitis. We submitted an IND to the FDA for CAT-2003 in September 2012. We are currently conducting a Phase 2a clinical trial of CAT-2003 for the treatment of MFC and rSHTG and expect to report top-line data in the second quarter of 2015.

Hypertriglyceridemia Market Overview

Triglycerides are an important source of energy for the body and are carried through the body as a component of two different lipoprotein particles, chylomicrons and very low density lipoprotein, or VLDL. Chylomicrons are derived from the diet and assembled in the intestine, while VLDL is synthesized in the liver. Dietary triglycerides are absorbed into intestinal cells, incorporated into chylomicrons and then enter the circulation where they are transported to muscle and adipose tissue to be metabolized by lipoprotein lipase, or LPL, to satisfy immediate energy requirements or stored for later use. LPL is the major enzyme in the body responsible for metabolizing triglycerides. Upon activation, LPL facilitates hydrolysis of triglycerides from chylomicrons and VLDL particles. Under normal conditions, where triglycerides are below 150 mg/dL, LPL is able to effectively process triglycerides. However, when triglyceride levels reach 500 mg/dL or above, the LPL enzyme becomes saturated and is not able to metabolize triglycerides as effectively. This situation can become exacerbated following the ingestion of a high fat meal where postprandial, or post-meal, triglyceride levels are naturally increased above the baseline fasting levels.

Severely elevated levels of fasting triglycerides, defined as baseline triglycerides greater than 500 mg/dL, significantly increase the risk of acute pancreatitis, a severe inflammation of the pancreas that is associated with substantial morbidity and mortality. Pancreatitis can range in severity from a self-limited illness to life-threatening multi-organ failure requiring prolonged hospitalization. Increasing levels of fasting triglycerides are associated with an increasing risk for developing acute pancreatitis, with the lifetime prevalence of acute pancreatitis reaching 10-20% in patients with triglyceride levels in excess of 2000 mg/dL. Patients with rSHTG whose triglyceride levels remain above 500 mg/dL have an 79% increased risk of pancreatitis as compared to patients who achieve triglyceride levels below 500 mg/dL. Diabetes is a common co-morbidity in SHTG, occurring in 24-37% of patients with SHTG while occurring in only 9% of the U.S. population. This association increases to a 42-72% incidence of diabetes in patients with hypertriglyceridemia-induced acute pancreatitis.

The National Cholesterol Education Program Expert Panel on Detection, Evaluation and Treatment of High Blood Cholesterol has recommended the use of fibrates and/or niacin to lower triglyceride levels in patients with SHTG, while the American Heart Association and the National Lipid Association have recommended pharmacological therapy, including fibrates, niacin, omega-3 fatty acids and/or statins. While the triglyceride levels of most of the estimated 4 million patients with SHTG can be reduced below 500 mg/dL with diet, exercise and currently available medications, we estimate that approximately 160,000 patients in the U.S. have rSHTG, which is defined as having fasting triglyceride levels above 500 mg/dL despite treatment with currently available therapies. Approximately 50,000 to 60,000 of these patients have MFC, or fasting triglyceride levels above 750 mg/dL despite treatment with currently available therapies, and are at even greater risk of developing pancreatitis. Both rSHTG patients and MFC patients are considered at risk of acute pancreatitis episodes and are candidates for new triglyceride management therapies. A therapy that lowers both fasting and postprandial triglycerides through the activation of LPL could provide important benefits to treatment-refractory patients with severely elevated triglycerides.

Statins generally are prescribed to treat moderate hypertriglyceridemia, or fasting triglyceride levels below 500 mg/dL, while fibrates, omega-3 fatty acids and niacin are used to treat more severe hypertriglyceridemia. In the 12 months ended September 2014, combined U.S. sales of fibrates, prescription omega-3 fatty acids and prescription niacin were approximately $2.7 billion, according to IMS Health. However, currently available treatments for SHTG have limitations. Fibrates and some of the omega-3 fatty acid products cause LDL-C to increase in SHTG patients and niacin causes increases in blood glucose levels. Of patients being treated for SHTG, an estimated 20% still have fasting triglycerides above 500 mg/dL despite drug therapy and therefore are considered rSHTG patients. We believe there is an attractive market opportunity for an oral therapy which effectively reduces fasting and postprandial triglyceride levels in rSHTG patients, with neutral-to-positive effects on LDL-C and blood glucose.

Our Approach to Lowering Triglycerides

SREBPs are transcription factors that control prevailing and cellular levels of lipids including triglycerides and LDL-C. Important for triglyceride levels, SREBP controls the expression of three proteins, apoliprotein C3 or ApoC3, angiopoietin-like protein 3, or Angptl3, and angiopoietin-like protein 4, or Angptl4. Each of these proteins inhibits the activity of LPL and decreases the ability of LPL to metabolize triglycerides. CAT-2003 works by inhibiting the maturation of the SREBP protein in the cell, thereby reducing the amount of mature SREBP protein in the cell nucleus, which reduces the expression of ApoC3, Angptl3 and Angptl4. We believe that modulating SREBP activity in the intestine will lead to an increase in LPL enzyme activity, accelerated clearance of triglycerides and substantial reductions in both fasting and postprandial triglyceride levels.

CAT-2003 for the Treatment of Multifactorial Chylomicronemia and Refractory Severe Hypertriglyceridemia

We are developing CAT-2003 for the treatment of patients with MFC and rSHTG. CAT-2003 acts primarily in the intestine due to the rapid activation of its SMART linker within intestinal cells. The bioactives then inhibit the maturation of SREBP proteins within these cells. We have observed in preclinical studies that this inhibition decreased the expression of the key negative regulator proteins of LPL: ApoC3, Angptl3 and Angptl4. By inhibiting the production of the negative regulator proteins of LPL, CAT-2003 enhances LPL enzyme activity. Based on this mechanism, we believe CAT-2003 may be efficacious in the reduction of severely elevated triglycerides that are not adequately controlled by current therapies.

We initially formulated CAT-2003 in a non-coated soft gelatin capsule for early clinical development. We tested the non-coated capsule formulation of CAT-2003 in our initial Phase 1 and first two Phase 2a clinical trials. At higher doses of, or with longer exposure to, CAT-2003 we observed gastrointestinal tolerability issues. We reformulated CAT-2003 in a gelatin capsule with a pH-sensitive polymer coating to potentially improve tolerability by reducing stomach exposure. We then conducted a Phase 1 clinical trial with this coated formulation and we are using the coated gelatin capsule in our ongoing Phase 2a clinical trial of CAT-2003.

We have completed two four-week Phase 2a clinical trials of CAT-2003 in patients with elevated triglycerides and two Phase 1 clinical trials in healthy volunteers. In the Phase 2a clinical trials, CAT-2003 reduced elevated triglycerides, including in patients treated with other triglyceride and lipid lowering therapies. CAT-2003 also demonstrated in Phase 2a clinical trials beneficial effects on other lipid and cardio-metabolic parameters, such as LDL-C and blood glucose. We are currently conducting a 12-week Phase 2a clinical trial in patients with rSHTG, including patients with chylomicronemia syndromes. In our clinical trials conducted to date, CAT-2003 appeared to be safe at up to 12 weeks of patient dosing and there were no observed trends in laboratory values, vital signs, electrocardiogram or physical examination. We believe CAT-2003 has the potential to provide clinically important therapeutic benefits to patients whose triglycerides are not adequately controlled by diet, exercise and existing therapies, and who remain at risk for developing pancreatitis.

CAT-2003 Clinical Development

To date, we have studied CAT-2003 in four completed clinical trials and one ongoing clinical trial in multiple patient populations including patients with moderate hypertriglyceridemia, patients with hypercholesterolemia, patients with SHTG, patients with familial chylomicronemia, or FCS, patients with MFC and patients with rSHTG. FCS is a rare genetic disorder where patients experience extremely elevated triglyceride levels, often in excess of 2000 mg/dL. These completed and ongoing clinical trials include three Phase 2a clinical trials and two Phase 1 clinical trials. The design and results for these clinical trials are discussed below.

CAT-2003—Completed and Ongoing Clinical Trials

Trial	Phase and Status	Description	Duration	Subjects	
				Total	Treated
CAT-2003-101	Phase 1 — Completed	First-in-human, randomized, placebo-controlled, single and multiple ascending dose clinical trial to evaluate safety, tolerability, pharmacokinetics and pharmacodynamics of CAT-2003 in healthy subjects	1 and 14 days	99	79
CAT-2003-201	Phase 2a — Completed	Double-blind, randomized, placebo-controlled trial to evaluate safety, tolerability and efficacy of CAT-2003 alone and in combination with statins in patients with hyperlipidemia	28 days	99	71
CAT-2003-202	Phase 2a — Completed	Single-blind trial to evaluate efficacy, safety and tolerability of CAT-2003 in patients with SHTG and rSHTG	28 days	14	14
CAT-2003-203	Phase 2a — Ongoing	Single-blind trial to evaluate efficacy, safety and tolerability of CAT-2003 in patients with FCS, MFC and rSHTG	12 weeks	12 - 18 Expected	Ongoing
CAT-2003-102	Phase 1 — Completed	Multiple dose trial to evaluate safety, tolerability, pharmacokinetics and pharmacodynamics of CAT-2003 coated capsule formulation in healthy subjects	7 days	48	48

Phase 1 Clinical Trial in Healthy Volunteers (CAT-2003-101)

We conducted a Phase 1 trial in healthy volunteers at a single center in the United States to assess the safety, tolerability and pharmacokinetics of single and multiple doses of CAT-2003 in both fasting and fed states. We also measured CAT-2003 effects on post-prandial triglycerides and other lipid parameters.

Single Ascending Dose: 41 healthy volunteers were randomized to receive CAT-2003 in soft gelatin capsules at doses ranging from 300 mg to 2000 mg or placebo. Single doses of CAT-2003, administered under fed and fasted conditions, appeared to be safe. In subjects administered CAT-2003, the most commonly reported AEs were diarrhea, nausea and abdominal distention, and the majority were mild in severity. In subjects administered CAT-2003, reports of gastrointestinal adverse events were higher in

the fed state than in the fasted state. We observed no clinically important trends in laboratory, vital signs or electrocardiogram results following CAT-2003 administration in either the fasted or fed state and no association between administration of CAT-2003 and flushing, a frequently reported side effect of niacin.

CAT-2003 was rapidly absorbed in plasma, with mean maximum and overall plasma exposure generally increasing with CAT-2003 dose. Nicotinic acid was not detected in plasma at levels above background, consistent with intracellular cleavage of CAT-2003 and intracellular delivery of the component bioactives. Exposure of CAT-2003 was similar in the fasted and fed states.

We measured postprandial triglycerides in healthy volunteers after single doses of 300 mg, 1000 mg and 2000 mg CAT-2003 and placebo were administered after a standardized high-fat meal. In subjects receiving the 300 mg dose of CAT-2003, the peak postprandial increase in plasma triglycerides was reduced by approximately 50% on average compared to subjects receiving placebo, while in subjects receiving the 1000 and 2000 mg doses of CAT-2003, the peak postprandial increase in plasma triglycerides was reduced by approximately 80% on average compared to subjects receiving placebo.

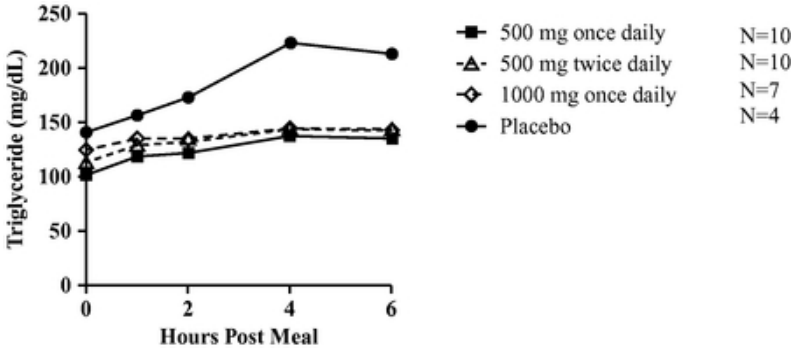
Multiple Ascending Dose: 58 healthy volunteers were administered CAT-2003 in soft gelatin capsules at doses ranging from 500 mg to 1500 mg or placebo daily for 14 days. In addition to the safety, tolerability and pharmacokinetics of CAT-2003, we assessed the activity of CAT-2003 on lipid parameters including fasting and postprandial triglycerides following 14 days of dosing.

CAT-2003 administered for 14 days demonstrated no abnormalities in laboratory values, vital signs, electrocardiogram or physical examination that were considered to be drug-related AEs. The most common AEs were gastrointestinal, including diarrhea, nausea and vomiting, and headache. The majority of subjects at a total daily dose of 1000 mg had gastrointestinal AEs. Overall, most AEs were mild in intensity but moderate intensity gastrointestinal AEs were reported, particularly at daily doses of 1000 mg.

CAT-2003 was rapidly absorbed in plasma, with mean maximum and overall plasma exposure generally increasing with CAT-2003 dose. Nicotinic acid was not detected in plasma at levels above background, consistent with intracellular cleavage of CAT-2003 and intracellular delivery of the component bioactives.

We observed that postprandial triglyceride levels were reduced after two weeks of treatment with CAT-2003. The graph below shows that the 500 mg and 1000 mg total daily doses of CAT-2003 substantially suppressed the expected increase in postprandial lipids after the first meal of the day as compared to the typical increase in postprandial triglycerides observed in the placebo group. We did did not assess the statistical significance of these data and did not measure postprandial lipids after a high-fat meal in subjects receiving 1500 mg total daily doses of CAT-2003.

Postprandial Triglycerides after a High-fat Meal on Day 14 of Treatment



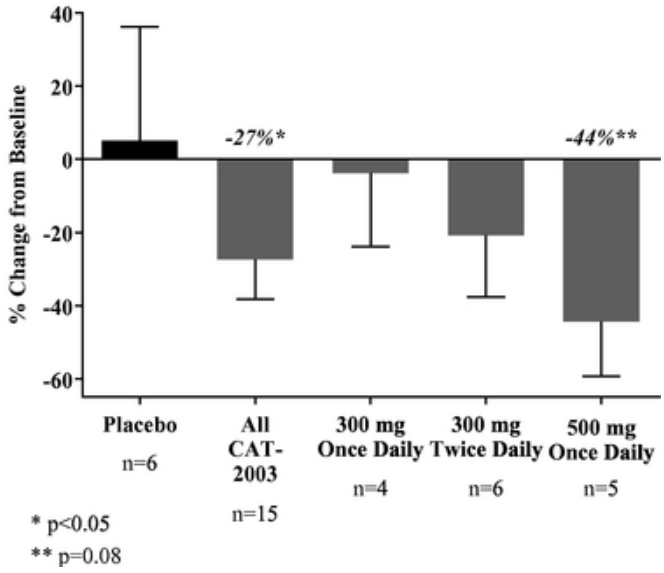
Phase 2a Clinical Trial in Patients with Hyperlipidemia (CAT-2003-201)

We conducted a Phase 2a randomized, double-blind, placebo-controlled clinical trial in 72 patients with moderate hypertriglyceridemia with baseline triglyceride levels between 200 and 500 mg/dL and in 27 patients with hypercholesterolemia, defined as LDL-C levels between 100 mg/dL and 190 mg/dL and triglycerides less than 200 mg/dL, while on a statin. We enrolled patients at 15 sites in the United States and Canada. Patients were treated for 28 days with CAT-2003 at doses of 300 mg once daily, 500 mg once daily or 300 mg twice daily, or placebo.

We observed a median 16% reduction in fasting triglycerides in patients receiving 500 mg CAT-2003. Median triglyceride reductions in the placebo, 300 mg once daily and 300 mg twice daily dosing cohorts were less than 5%. However, in a pre-specified subgroup of patients with a baseline fasting triglyceride value greater than 350 mg/dL, we observed a median 27% decrease in fasting triglycerides from baseline in all CAT-2003-treated patients, and a median 44% decrease in fasting triglycerides in patients receiving 500 mg CAT-2003. The greater effect of CAT-2003 in patients with higher baseline triglycerides is consistent with preclinical data supporting CAT-2003's mechanism of enhancing LPL activity.

CAT-2003 Effect on Fasting Triglycerides

Baseline Triglycerides >350 mg/dL



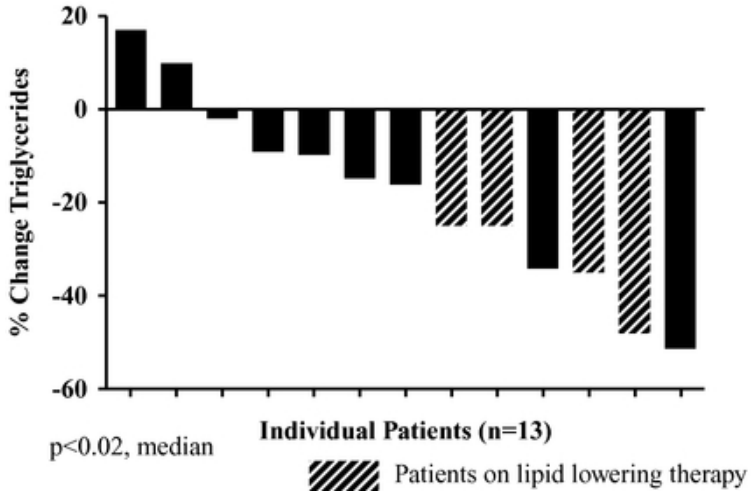
In the cohort of patients with hypercholesterolemia, we observed that CAT-2003 reduced LDL-C levels by a median 11% in patients who received a 500 mg once daily dose on concomitant moderate-dose statin therapy. In the 21 patients with Type 2 diabetes enrolled in the trial and randomized to CAT-2003, we observed reductions in fasting glucose and a statistically significant reduction in HbA1c over the four weeks of treatment.

The most common AEs reported were gastrointestinal, with nausea, diarrhea, vomiting and abdominal discomfort the most frequently reported, and most were mild or moderate in severity. Four patients discontinued treatment because of gastrointestinal AEs and several received dose reductions because of AEs. We observed no clinically important trends in laboratory, vital signs or electrocardiogram results.

Phase 2a Clinical Trial in Patients with with SHTG and rSHTG (CAT-2003-202)

We conducted a randomized, single-blind Phase 2a trial in 14 patients with SHTG and rSHTG, defined as fasting triglycerides greater than 500 mg/dL and either treatment naïve or currently taking other triglyceride-lowering therapies, to evaluate the effect of CAT-2003 on triglyceride levels and 13 of the 14 patients enrolled completed dosing. This clinical trial enrolled patients at four sites in the United States. A placebo run-in for two weeks was followed by treatment with with 500 mg of CAT-2003 dosed once-daily for four weeks. We observed a reduction in fasting triglycerides from a median of 658 mg/dL after the placebo run-in to a median of 467 mg/dL following four weeks of CAT-2003 treatment. We observed a comparable reduction in fasting triglycerides from a median of 760 mg/dL after the placebo run-in to a median of 452 mg/dL following four weeks of CAT-2003 treatment in the four patients on concomitant fibrate or statin therapy. In the four patients with Type 2 diabetes, three of whom were also receiving metformin, we observed decreases in HbA1c, which is a measure of glucose levels over time. The most common AEs reported were gastrointestinal, with nausea and diarrhea the most frequently reported, and all were mild in severity. We observed no clinically important trends in laboratory, vital signs or electrocardiogram results.

CAT-2003 Effect on Fasting Triglycerides

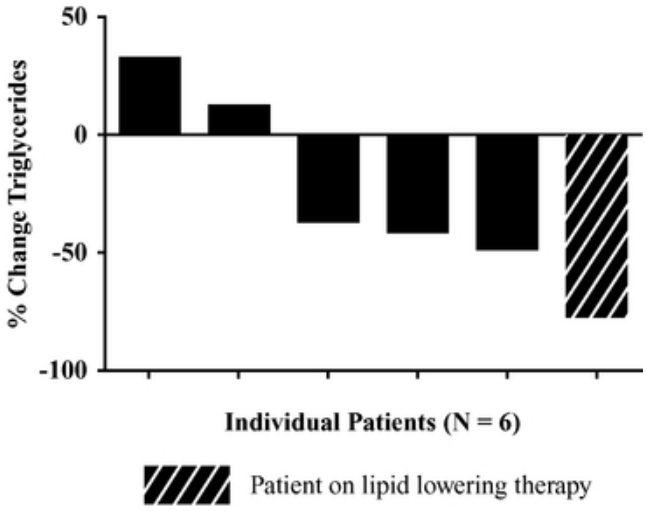


Ongoing Phase 2a Clinical Trial in Patients with FCS, MFC and rSHTG (CAT-2003-203)

We are currently conducting a 12-week single-blind Phase 2a clinical trial of CAT-2003 in patients with chylomicronemia syndromes and rSHTG. This trial is being conducted at two sites in Canada. Patients with FCS have been enrolled based on previous diagnosis, and patients with MFC and rSHTG

have been enrolled based on history of fasting triglycerides greater than 880 mg/dL, or, if on stable dose of fibrate therapy, documented fasting triglycerides greater than 440 mg/dL. All patients enrolled in the trial are participating in a run-in period, during which patients follow a low fat diet and receive placebo, followed by a 12-week CAT-2003 treatment phase. All of the patients initially enrolled in this trial experienced gastrointestinal adverse effects at some point with the uncoated capsule formulation of CAT-2003. These AEs included nausea, vomiting or diarrhea, in some cases leading to dose reduction or discontinuation. Preliminary efficacy data from the six MFC and rSHTG patients in the trial with the uncoated capsule formulation of CAT-2003 indicate that CAT-2003 reduced fasting triglycerides by a median of 40% at a dose of 500 mg once daily. We observed no clinically important trends in laboratory, vital signs or electrocardiogram results.

CAT-2003 Effect on Fasting Triglycerides (Non-Coated Capsule)



Not statistically significant

We have re-enrolled and are completing the CAT-2003-203 trial utilizing the coated capsule formulation of CAT-2003. We expect top-line data for the patients treated with the CAT-2003 coated capsule formulation to be available in the second quarter of 2015.

Phase 1 Clinical Trial of the CAT-2003 Coated Capsule Formulation (CAT-2003-102)

We conducted a Phase 1 trial in healthy volunteers to examine the safety, tolerability and pharmacokinetics of seven days of treatment with the CAT-2003 coated capsule formulation. This trial enrolled 48 subjects at one site in the United States. In this trial, the coated capsule formulation of CAT-2003 substantially reduced gastrointestinal side effects, particularly nausea and vomiting, over the seven-day treatment period while retaining the desired pharmacokinetic and pharmacodynamic profile.

CAT-2003 Preclinical Development

We have observed that CAT-2003 reduced fasting or post-prandial triglycerides in several *in vivo* models of hypertriglyceridemia. In some of these studies, we observed that the combination of EPA and niacin tested at doses that corresponded to the top dose of CAT-2003 tested did not reduce triglycerides significantly. In a study using a mouse model, we also observed that CAT-2003 reduced liver inflammation and liver fat content.

We have investigated the mechanism of action of CAT-2003 based on the abilities of EPA and niacin to modulate triglyceride and cholesterol synthesis through SREBP modulation. In human cell lines, we have observed that CAT-2003 reduced the amount of mature SREBP protein and levels of ApoC3, Angptl3 and Angptl4 to a greater extent than either EPA or niacin alone or in combination, and also increased LPL activity in cells.

CAT-2054

Similar to CAT-2003, CAT-2054 is an orally administered SMART linker conjugate of EPA and nicotinic acid, designed to modulate the SREBP pathway. However, unlike CAT-2003, which we designed to be active in cells in the intestine, we designed CAT-2054 to be active in cells in the liver. By modulating the SREBP pathway in the liver, CAT-2054 may inhibit production of important cholesterol metabolism proteins, such as PCSK9, HMG-CoA reductase and ATP citrate lyase. We are developing CAT-2054 for the treatment of hypercholesterolemia, or elevated LDL-C. In a clinical trial and preclinical studies of CAT-2003, we observed statistically significant reductions in LDL-C, suggesting the impact of SREBP modulation on cholesterol metabolism. Because the liver is the primary site of LDL-C synthesis and clearance, we specifically designed the SMART linker in CAT-2054 to deliver more of the intact conjugate to the liver, as compared to CAT-2003, which is cleaved primarily in cells of the intestine. We believe that CAT-2054, if approved, has the potential to be the first therapy to simultaneously modulate cholesterol synthesis, clearance and absorption. We are initially developing CAT-2054 to treat patients with hypercholesterolemia for whom existing treatments are insufficient. We submitted an IND to the FDA for CAT-2054 in November 2014. In January 2015, we initiated a Phase 1 clinical trial to assess the safety, tolerability and pharmacokinetics of CAT-2054 in healthy volunteers. If the results of this clinical trial are positive, we intend to initiate a Phase 2 clinical trial for the treatment of hypercholesterolemia in the fourth quarter of 2015.

Hypercholesterolemia Market Overview

Hypercholesterolemia is a major risk factor for cardiovascular disease, or CVD, a leading cause of mortality and morbidity in the United States. Hypercholesterolemia is a complex disease involving redundant biological pathways that are tightly regulated and have built-in feedback mechanisms. Current treatment guidelines recognize lowering of LDL-C as a primary target for reducing the risk of CVD.

Several of the lipid-lowering therapies currently available or in development target proteins in the SREBP pathway. SREBP is a master regulator of lipid metabolism and controls the expression of proteins involved in the synthesis, clearance and absorption of LDL-C. These proteins include: HMG-CoA reductase, an enzyme that plays a central role in the synthesis of LDL-C in the liver; PCSK9, a protein that controls the clearance of LDL-C from circulation through modulation of the amount of LDL-C receptor protein on the surface of the liver; and ATP citrate lyase, an enzyme in the LDL-C synthetic pathway. Within the intestine, SREBP controls the expression of the Niemann-Pick C1-like 1, or NPC1L1, which is the critical mediator of cholesterol absorption in the gastrointestinal tract epithelial cells as well as in liver cells.

- *Statins.* Statins are typically prescribed as first-line therapy for reducing LDL-C based on their efficacy, established safety and proven benefit in reducing cardiovascular event risk. Statins inhibit HMG-CoA reductase. Crestor® (rosuvastatin), the largest remaining branded prescription statin, generated worldwide sales of $5.6 billion for the 12-month period ended September 2014.

- *Cholesterol Absorption Inhibitors.* Ezetimibe is a cholesterol absorption inhibitor that targets NPC1L1, reducing LDL-C by inhibiting cholesterol absorption in the small intestine. It may be used alone (marketed as Zetia® or Ezetrol), for example in statin-intolerant patients, or together with statins, such as in ezetimibe/simvastatin (marketed as Vytorin® and Inegy), when statins

alone do not control cholesterol. Zetia and the combination product Vytorin together generated worldwide sales of $4.3 billion for the 12-month period ended September 2014.

- *Monoclonal antibodies against PCSK9 and inhibitors of ATP citrate lyase.* In addition to the marketed therapies, several companies are developing other agents that target the synthesis and clearance of LDL-C. Monoclonal antibodies against PCSK9 are injectable, fully human antibodies that are being evaluated as potential therapies to lower LDL-C. ATP citrate lyase inhibitors target cholesterol synthesis in the liver but at an earlier step of the pathway than statins. To date, none of these agents has received U.S. or European marketing approval.

Despite the availability of these classes of drugs that lower LDL-C, many patients are unable to achieve their LDL-C goals using the marketed therapies. A 2011 report of the Centers for Disease Control and Prevention estimated that, of the 34 million adults in the United States receiving treatment for high LDL-C, 11 million had uncontrolled LDL-C. The limitations of the efficacy of some existing therapies, including statins, may be partly the result of feedback mechanisms in the SREBP pathway, which ensure that cellular cholesterol levels are maintained at levels required for normal cellular function. For example, doubling the dose of a statin is accompanied by only an incremental 7% lowering of lipids. This non-linear decrease in LDL-C as the statin dose increases is due to feedback mechanisms that are triggered when HMG-CoA reductase is inhibited to a greater extent. As statin dose is increased, intracellular levels of cholesterol decrease, ultimately resulting in activation of the SREBP pathway. Activated SREBP induces the expression of PCSK9 which promotes the degradation of the LDL-C receptor, resulting in reduced clearance of LDL-C from circulation. The feedback mechanism ensures that the cell is never completely depleted of cholesterol because cholesterol is required for cellular viability. Thus, high-dose statins trigger a feedback mechanism that counteracts their beneficial effects on lipids.

Several biotechnology and pharmaceutical companies have pursued compounds to inhibit SREBP. The goal of these programs has been to identify small molecule drugs that can block the activity of SREBP and produce beneficial effects on lipids. Directly reducing active SREBP may have a significant benefit on LDL-C levels in circulation. SREBP modulators may work synergistically with inhibitors of proteins that are downstream of SREBP such as PCSK9, HMG-CoA reductase and ATP citrate lyase. In addition, SREBP modulators may substantially reduce feedback mechanisms that are activated by other classes of LDL-C lowering drugs such as statins and ezetimibe.

CAT-2054 for the Treatment of Hypercholesterolemia

CAT-2054 is a SMART linker conjugate designed to modulate SREBP in the liver and to reduce LDL-C levels in patients with hypercholesterolemia. We designed the SMART linker in CAT-2054 to be more stable to intracellular enzymatic cleavage than the SMART linker in CAT-2003. We have observed in preclinical studies that CAT-2054 was cleaved at a significantly slower rate than CAT-2003, and that significantly greater levels of CAT-2054 reached the liver following oral dosing than with CAT-2003. This slower rate of cleavage enables more intact CAT-2054 to pass through the portal vein and to the liver, where SREBP controls LDL-C levels. We have observed in *in vitro* studies that, once cleaved in human liver cells, CAT-2054 inhibited the activity of SREBP by blocking its maturation, a conversion from an inactive to an active form. This inhibition reduced the expression of downstream target genes in the SREBP pathway, including HMG-CoA reductase, PCSK9 and ATP citrate lyase. Based on this mechanism, we believe CAT-2054 may be effective in reducing elevated LDL-C and positively affect other metabolic parameters.

We intend to pursue development and commercialization collaborations with biotechnology and pharmaceutical companies to maximize the value of CAT-2054 as a treatment for hypercholesterolemia. We intend to pursue such collaborations for CAT-2054 following the completion of Phase 2 clinical development.

CAT-2054 Clinical Development

Ongoing Phase 1 Clinical Trial

In January 2015, we initiated a randomized, double-blind, placebo-controlled Phase 1 trial at a single site in the United States. This clinical trial, which will assess single and multiple ascending doses of CAT-2054, will assess the safety, tolerability and pharmacokinetics of CAT-2054 in healthy volunteers. We will also assess the activity of CAT-2054 on lipid parameters including LDL-C and triglycerides following 14 days of dosing.

Planned Phase 2a Clinical Trial

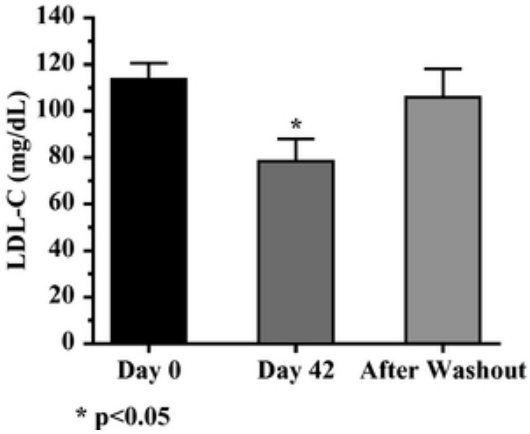
We expect to initiate a randomized, double-blind, placebo-controlled Phase 2a trial in the second half of 2015 at multiple sites in the United States in patients with hypercholesterolemia. In this clinical trial, patients will be treated for four weeks. We intend to compare multiple dose levels of CAT-2054 either as monotherapy or in combination with a statin. We expect the primary endpoint to be reduction in levels of LDL-C. We also plan to assess the activity of CAT-2054 on other lipid parameters, including triglycerides.

Preclinical Data for CAT-2054

Based on a comprehensive program of preclinical testing of CAT-2054, including several *in vitro* analyses and *in vivo* studies in animal models, we believe that CAT-2054 may be effective in reducing elevated LDL-C and have positive effects on other metabolic parameters. Key findings from our preclinical program included the following:

- CAT-2054 reduced LDL-C in rhesus monkeys that were maintained on a high fat, high cholesterol diet. We observed no effect on food consumption or body weight. We dosed the animals with CAT-2054 at 500 mg by capsule once daily for six weeks. As shown in the graph below, at the end of the treatment period, we observed a significant reduction in LDL-C levels relative to baseline. The effect of CAT-2054 on plasma LDL-C levels was most pronounced in the monkeys with the highest baseline LDL-C levels. Additionally, we observed that LDL-C levels returned to near baseline after a washout period following the end of dosing with CAT-2054.

CAT-2054 Effect on LDL-C in Rhesus Monkeys on a High Cholesterol Diet



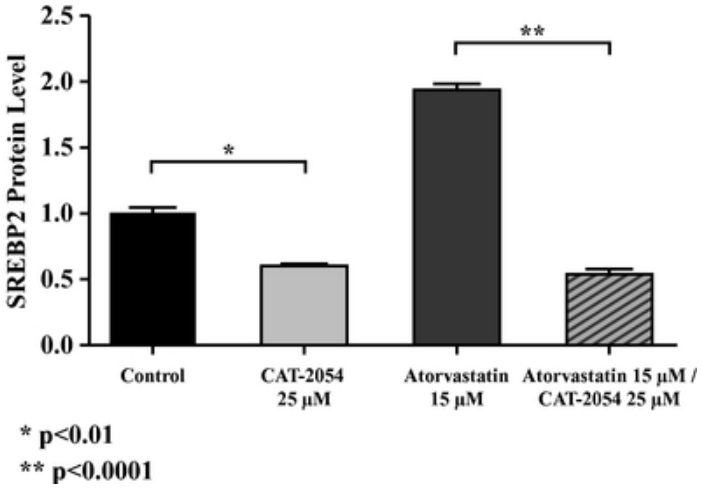
- CAT-2054 significantly reduced fasting plasma LDL-C in cynomolgus macaque monkeys that had developed age-related spontaneous dyslipidemia, which were maintained on a normal diet. In this study, we dosed the animals with CAT-2054 at 100 mg/kg by oral gavage, once daily for four

weeks. We observed no effect on body weight. The reduction in LDL-C reached a maximum effect after 14 days of treatment with a mean reduction of fasting LDL-C levels of 21%. The effect of CAT-2054 on plasma LDL-C levels was most pronounced in the monkeys with the highest baseline LDL-C levels. CAT-2054 treatment for two weeks essentially returned LDL-C to normal levels in these monkeys without significantly decreasing LDL-C below the normal threshold.

- In an *in vitro* study, we observed that treatment of a human liver cell line with CAT-2054 reduced the amount of mature SREBP protein and that this reduction was greater than what we observed with approximately equivalent amounts of EPA and niacin administered either alone or in combination.

- In *in vitro* studies, we have observed that treatment of a human liver cell line with the statin atorvastatin caused an approximately two-fold increase in the amount of mature SREBP. As shown in the graph below, in these studies, CAT-2054 inhibited the activation of SREBP2, a form of SREBP that controls the expression of genes involved in LDL-C synthesis and clearance in the liver, to the same extent in the presence or absence of atorvastatin. As expected, due to feedback mechanisms in the SREBP pathway, treatment with atorvastatin alone increased the activiation of SREBP2. These data suggest that CAT-2054 may inhibit SREBP2 maturation and subsequent SREBP2-mediated gene transcription in the presence or absence of a statin.

CAT-2054 Effect on SREBP2 Activation in the Presence or Absence of a Statin



- In an *in vitro* study, we observed that treatment of a human liver cell line with CAT-2054 inhibited the expression of multiple SREBP2 target genes, including HMG-CoA reductase, PCSK9 and ATP citrate lyase, after a 24-hour incubation.

- In an *in vitro* study, we observed that treatment of a human liver cell line with CAT-2054 reduced the secretion of PCSK9 protein. The reduction in PCSK9 protein secretion was dependent on dose of CAT-2054 with higher doses resulting in greater reductions. We also observed the bioactive components of CAT-2054, EPA and nicotinic acid, did not have a significant effect on PCSK9 secretion when administered to cells either individually or in combination at similar concentrations.

- In an *in vitro* study, we observed that CAT-2054 induced a dose-dependent increase in LDL receptor protein levels on the surface of a human liver cell line. Following secretion from

cells, PCSK9 binds to the LDL receptor and induces the receptor to be internalized and degraded. Therefore, inhibition of PCSK9 secretion leads to increases in LDL receptor levels.

CAT-4001

CAT-4001 is a SMART linker conjugate of monomethyl fumarate and DHA designed to modulate the Nrf2 and NF-kB pathways. We are developing CAT-4001 initially for the treatment of ALS and Freidreich's ataxia, two rare neurodegenerative diseases in which both the Nrf2 and NF-kB pathways have been implicated.

We designed CAT-4001 to combine the potentially beneficial activities of monomethyl fumarate and DHA on the Nrf2 and NF-kB pathways. Nrf2 is a transcription factor that regulates cellular response to oxidative stress. NF-kB is a transcription factor that controls cellular responses to stress and inflammation. Research suggests that oxidative stress and neuroinflammation contribute to the progression of both ALS and Friedreich's ataxia.

We observed in preclinical studies that CAT-4001 modulated the NF-kB pathway and the Nrf2 pathway. In cellular assays and in animal models, we observed that the activity produced by CAT-4001 was greater than that produced by the individual components, monomethyl fumarate and DHA, either alone or in combination at approximately equivalent amounts to those contained in the CAT-4001 conjugate.

Based on its mechanism of action, we believe that CAT-4001 has the potential to be used in patients with certain neurodegenerative diseases, particularly ALS or Friedreich's ataxia. We plan to conduct preclinical studies of CAT-4001 in 2015, and if the results of these preclinical studies are positive we intend to advance CAT-4001 into a Phase 1 clinical trial in 2016.

Amyotrophic Lateral Sclerosis

ALS, sometimes called Lou Gehrig's disease or classical motor neuron disease, is a rapidly progressive, invariably fatal neurological disease that attacks the nerve cells responsible for controlling voluntary muscles. Eventually, muscle weakness and atrophy occurs. People with ALS lose the ability to stand and walk, and use their hands and arms. In later stages of the disease, individuals have difficulty breathing as the muscles of the respiratory system weaken. Although ventilation support can enable breathing and prolong survival, it does not affect the progression of ALS. Most people with ALS die from respiratory failure, usually within three to five years of diagnosis.

According to the ALS Association, approximately 5,600 people in the United States are diagnosed with ALS each year. The incidence of ALS is two per 100,000 people, and it is estimated that as many as 30,000 Americans may have the disease at any given time. ALS occurs throughout the world and affects all racial, ethnic or socioeconomic groups.

Friedreich's Ataxia

Friedreich's ataxia is a rare genetic disease that causes nervous system damage and movement problems. Friedreich's ataxia is caused by a defect in the frataxin gene, which regulates iron levels in the mitochondria. In the majority of cases, the genetic defect in Friedreich's ataxia causes a reduction in the production of the frataxin protein and iron levels in mitochondria become poorly regulated. In Friedreich's ataxia, iron overload in mitochondria affects metabolism, causing oxidative stress and ultimately damaging mitochondrial DNA. Progressive degeneration of central and peripheral nervous systems in Friedreich's ataxia patients causes impaired gait and coordination, muscle loss and fatigue. Disease progression varies, but generally, the patient is confined to a wheelchair within 10 to 20 years after the appearance of the first symptoms. Patients may become completely incapacitated in later stages of the disease.

Nrf2 regulates mitochondrial function to control cellular energy metabolism. Activation of Nrf2 increases the mitochondrial use of fatty acids and glucose, two molecules that work as cellular fuel, and increases the formation of new mitochondria. Preclinical studies indicate that genetic or pharmacologic Nrf2 activation positively regulates mitochondrial function and energy production. This activity may translate into improved physical functioning and reduced fatigue in patients with Friedreich's ataxia.

Friedreich's ataxia affects both males and females and there are approximately 6,000 patients with Friedreich's ataxia in the United States and 20,000 in the European Union.

Sales and Marketing

Given our stage of development, we have not yet established a commercial organization or distribution capabilities, nor have we entered into any collaboration or co-promotion arrangements. We plan to build focused capabilities in the United States and Canada to commercialize development programs, such as CAT-1004 for DMD, where we believe that the medical specialists for the indications are sufficiently concentrated to allow us to effectively promote the product with a targeted sales team. We also intend to enter into strategic relationships with biotechnology and pharmaceutical companies where realizing the full value of our development programs will require access to broader geographic markets or the pursuit of broader patient populations or indications. In addition, we intend to expand the drug development applications of our SMART linker technology platform through selective collaborations with leading biotechnology and pharmaceutical companies.

Manufacturing and Supply

Each of our SMART linker conjugate product candidates is a small molecule compound manufactured from component raw materials, for each of the bioactives and for the linker. The omega-3 fatty acid materials that we use as bioactives are purified from natural sources by established pharmaceutical intermediate manufacturers. The other bioactive and linker raw materials that we use are readily available from established pharmaceutical intermediate manufacturers who synthesize them using well understood, conventional chemistries. The components are conjugated to form the SMART linker product candidate using well understood, conventional chemistries.

We currently have no manufacturing facilities and limited personnel with manufacturing experience. We rely on contract manufacturers to produce both drug substance and drug product required for our clinical trials. We plan to continue to rely upon contract manufacturers and, potentially, collaborators to manufacture commercial quantities of our products, if approved.

Competition

The development and commercialization of new drugs is highly competitive. If we successfully develop and commercialize any of our product candidates, we and any future collaborators will face competition from pharmaceutical and biotechnology companies worldwide. Many of the entities developing and marketing potentially competing products have significantly greater financial resources and expertise than we do in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing. Our commercial opportunity will be reduced or eliminated if our competitors develop and commercialize products that are more effective, have fewer side effects, are more convenient or are less expensive than any products that we may develop.

The key competitive factors affecting the success of our product candidates, if approved, are likely to be their efficacy, safety, convenience, price and the availability of coverage and reimbursement from government and other third-party payors.

CAT-1004 for Duchenne Muscular Dystrophy

There are currently no therapies approved for the treatment of DMD in the United States. Although not approved for the treatment of DMD, corticosteroid therapy is often prescribed to treat the inflammation underlying DMD and to delay loss of ambulation. Marathon Pharmaceuticals has announced that it is conducting clinical trials and preclinical studies to support approval of deflazacort, a corticosteroid, in DMD and that it anticipates filing an NDA for deflazacort with the FDA in 2016.

A number of companies are developing therapies to treat DMD in patients with specific mutations in the dystrophin gene. PTC Therapeutics has received conditional approval for Translarna™ in the European Union for DMD patients with nonsense mutations and has begun a rolling NDA submission for marketing approval in the United States. Prosensa (which has agreed to be acquired by BioMarin Pharmaceuticals) and Sarepta Therapeutics have product candidates in clinical development based on a different scientific approach, which is referred to as exon-skipping. Prosensa has begun a rolling NDA submission for approval in the United States for its lead product candidate, drisapersen, and Sarepta Therapeutics is conducting Phase 3 clinical trials of its lead product candidate eteplirsen and has announced that it intends to submit an NDA in 2015. Based on the prevalence of the specific mutations that these product candidates are designed to address, they would be expected to be effective in an aggregate of approximately 26% of DMD patients.

Other companies have alternative therapeutic approaches to the treatment of DMD in late stage clinical development. Santhera Pharmaceuticals has announced positive effects on respiratory function in a Phase 3 clinical trial of idebenone (Raxone® in the European Union and Catena® in the United States). Santhera has announced that it plans to seek regulatory approval for the treatment of DMD in Europe and the United States. Eli Lilly is conducting a Phase 3 trial of the product tadalafil (Cialis®), which is currently approved for marketing for the treatment of erectile dysfunction, to assess whether Cialis will increase blood flow to muscles and delay the loss of ambulatory function in patients with DMD. A number of companies have products in earlier stages of clinical development for DMD, including Akashi Therapeutics, Bristol Myers Squibb, Pfizer, Phrixus Pharmaceuticals, Summit Plc and Taiho Pharmaceuticals. If successfully developed, some of these alternative therapeutic approaches may be applicable to all DMD patients.

CAT-2003 for Multifactorial Chylomicronemia and Refractory Severe Hypertriglyceridemia

The market for lipid lowering therapeutics is large and competitive with many applicable drug classes. However, we expect that CAT-2003, if approved, will be focused, at least initially, on niche markets such as MFC and rSHTG where it can be positioned for use in combination with existing approved therapies, such as statins and fibrates, to provide incremental efficacy in currently underserved patient populations.

Several pharmaceutical companies have product candidates in clinical development based on different scientific approaches, which, if approved, would potentially compete with CAT-2003 for the treatment of MFC or rSHTG. Product candidates in Phase 3 clinical development for the treatment of MFC or rSHTG include Isis Pharmaceuticals' APOCIIIRx, which is a biologic antisense oligonucleotide, and Trygg Pharma's AKR-963 and Sancilio & Company's SC401B, each of which is a new omega-3 fatty acid preparation. Product candidates in Phase 2 clinical development include Arisaph Pharmaceuticals' niacin analog ARI-3037 MO and Pronova BioPharma's PRC-4016, a new omega-3 fatty acid compound.

Alnylam Pharmaceuticals has product candidates in preclinical development which, based on their mechanism, may have effects on triglycerides. These product candidates could be competitive with CAT-2003.

In addition, some product candidates currently in development or marketed for indications other than rSHTG or MFC could potentially be developed in the future for rSHTG or MFC or prescribed by physicians for patients with rSHTG or MFC without being labeled for those conditions. In particular, several products are in development for FCS. These products include UniQure's gene therapy product Glybera® (alipogene tiparvovec) and Novartis' LCQ908. In addition, Aegerion Pharmaceuticals has announced that it plans to develop Juxtapid® (Lojuxta in the European Union) for FCS. To our knowledge, none of these products is currently being developed for rSHTG or MFC.

CAT-2054 for Hypercholesterolemia

There are many widely available products, including statins and cholesterol absorption inhibitors, approved for the treatment of patients with hypercholesterolemia. The market and development pipeline for cholesterol regulating therapies is especially large and competitive. If CAT-2054 is approved for the treatment of hypercholesterolemia, either as monotherapy or in combination therapies, it will face intense competition from current approved therapies as well as a number of therapeutic approaches in development, including:

- *PCSK9 inhibitors.* The most advanced of these product candidates are the monoclonal antibodies alirocumab, being developed by Sanofi and Regeneron Pharmaceuticals, and evolocumab, being developed by Amgen. Both agents have completed Phase 3 clinical trials and are in the process of registration with United States and European regulatory authorities. Other PCSK9 inhibitors in clinical development include Pfizer's bococizumab, which is currently in Phase 3 clinical trials, and Eli Lilly's LY3015014, which has completed a Phase 2 clinical trial. In addition, Alnylam Pharmaceuticals has announced the filing of a Clinical Trial Application with the U.K. Medicines and Healthcare Products Regulatory Agency to initiate a Phase 1 clinical trial of ALN-PCSsc, which targets PCSK9.

- *Cholesterylester transfer protein (CETP) inhibitors.* CETP inhibitors are intended to reduce the risk of atherosclerosis. There are two CETP inhibitors in Phase 3 clinical trials, Merck's MK-0859 and Eli Lilly's LY2484595. Dezima Pharma's TA-8995 has completed a Phase 2b clinical trial.

Esperion is developing ETC-1002, an inhibitor of ATP citrate lyase that is currently in Phase 2b clinical trials, and Madrigal Pharmaceuticals' is developing MGL-3196, an inhibitor of thyroid hormone receptors that has completed Phase 1 clinical trials in healthy volunteers.

Intellectual Property

We strive to protect the proprietary technologies that we believe are important to our business, including pursuing and maintaining patent protection intended to cover the composition of matter of our product candidates, their methods of use, related technologies and other inventions that are important to our business. In addition to patent protection, we also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection, including certain aspects of our SMART linker technology platform.

Our commercial success depends in part upon our ability to obtain and maintain patent and other proprietary protection for commercially important technologies, inventions and know-how related to our business, defend and enforce our intellectual property rights, in particular, our patent rights, preserve the confidentiality of our trade secrets and operate without infringing valid and enforceable intellectual property rights of others.

The patent positions for biotechnology and pharmaceutical companies like us are generally uncertain and can involve complex legal, scientific and factual issues. In addition, the coverage claimed in a patent application can be significantly reduced before a patent is issued, and its scope can be reinterpreted and even challenged after issuance. As a result, we cannot guarantee that any of our product candidates will be protectable or remain protected by enforceable patents. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient proprietary protection from competitors. Any patents that we hold may be challenged, circumvented or invalidated by third parties.

As of December 31, 2014, our patent estate included 6 issued U.S. patents and over 25 pending U.S. patent applications, 10 issued foreign patents and 100 pending foreign patent applications.

With regard to CAT-1004, we have two issued U.S. patents and two allowed U.S. patent applications with composition of matter and method of use claims directed to CAT-1004 and its use. The issued U.S. patents and the allowed U.S. patent applications, when issued, are expected to expire in 2029, without taking a potential patent term extension into account. In addition, we have patents that have been granted in Australia, China, Mexico and New Zealand, which are expected to expire in 2029, without taking potential patent term extensions into account, and at least 20 pending patent applications in various other countries and regions in North America, South America, Europe, and Asia, which, if issued, are expected to expire in 2029, without taking potential patent term extensions into account.

With regard to CAT-2003 and CAT-2054, we have two issued U.S. patents with composition of matter and method of use claims directed to CAT-2003 and CAT-2054 and their use. These U.S. patents are scheduled to expire in 2030 and 2031, without taking potential patent term extensions into account. In addition, we have patents that have been granted in Mexico and New Zealand, which are expected to expire in 2030, without taking potential patent term extensions into account and at least 20 pending applications in various other countries and regions including North and South America, Europe, and Asia, which, if issued, are expected to expire in 2030, without taking patent term extensions into account. In addition, we have a pending U.S. patent application directed to CAT-2054, which, if issued, is expected to expire in 2033, without taking a potential patent term extension into account. We have at least 10 counterpart patent applications pending in various countries and regions in North America, South America, Europe and Asia, which, if issued, are expected to expire in 2033, without taking potential patent term extensions into account.

With regard to CAT-4001, we have an allowed, pending U.S. patent application with composition of matter and method of use claims directed to CAT-4001 and its use. This patent application, if issued, is expected to expire in 2031, without taking a potential patent term extension into account. We have at least 20 counterpart patent applications pending in various other countries and regions in North America, South America, Europe and Asia, which, if issued, are expected to expire in 2031, without taking potential patent term extensions into account.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application.

In the United States, the term of a patent covering an FDA-approved drug may be eligible for a patent term extension under the Hatch-Waxman Act as compensation for the loss of patent term during the FDA regulatory review process. The period of extension may be up to five years beyond the expiration of the patent, but cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval. Only one patent among those eligible for an extension may be extended. Similar provisions are available in Europe and in certain other jurisdictions to extend the term of a patent that covers an approved drug. It is possible that issued U.S. patents covering

CAT-1004, CAT-2003, CAT-2054 and CAT-4001 may be entitled to patent term extensions. If our product candidates receive FDA approval, we intend to apply for patent term extensions, if available, to extend the term of patents that cover the approved product candidates. We also intend to seek patent term extensions in any jurisdictions where they are available, however, there is no guarantee that the applicable authorities, including the FDA, will agree with our assessment of whether such extensions should be granted, and even if granted, the length of such extensions.

In addition to patent protection, we also rely on trade secret protection for our proprietary information that is not amenable to, or that we do not consider appropriate for, patent protection, including, for example, certain aspects of our manufacturing processes and conjugate selection methodologies. However, trade secrets can be difficult to protect. Although we take steps to protect our proprietary information, including restricting access to our premises and our confidential information, as well as entering into agreements with our employees, consultants, advisors and potential collaborators, third parties may independently develop the same or similar proprietary information or may otherwise gain access to our proprietary information. As a result, we may be unable to meaningfully protect our trade secrets and proprietary information.

Government Regulation and Product Approvals

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the European Union, extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of pharmaceutical products. The processes for obtaining regulatory approvals in the United States and in foreign countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

Review and Approval of Drugs in the United States

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and implementing regulations. The failure to comply with applicable U.S. requirements at any time during the product development process, approval process or after approval may subject an applicant and/or sponsor to a variety of administrative or judicial sanctions, including refusal by the FDA to approve pending applications, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters and other types of letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement of profits, or civil or criminal investigations and penalties brought by the FDA and the Department of Justice or other governmental entities.

An applicant seeking approval to market and distribute a new drug product in the United States must typically undertake the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's good laboratory practice, or GLP, regulations;
- submission to the FDA of an IND, which must take effect before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with good clinical practices, or GCP, to establish the safety and efficacy of the proposed drug product for each indication;

- preparation and submission to the FDA of an NDA;
- review of the product by an FDA advisory committee, where appropriate or if applicable;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product, or components thereof, are produced to assess compliance with current Good Manufacturing Practices, or cGMP, requirements and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;
- satisfactory completion of FDA audits of clinical trial sites to assure compliance with GCPs and the integrity of the clinical data;
- payment of user fees and securing FDA approval of the NDA; and
- compliance with any post-approval requirements, including Risk Evaluation and Mitigation Strategies, or REMS, and post-approval studies required by the FDA.

Preclinical Studies

Preclinical studies include laboratory evaluation of the purity and stability of the manufactured drug substance or active pharmaceutical ingredient and the formulated drug or drug product, as well as *in vitro* and animal studies to assess the safety and activity of the drug for initial testing in humans and to establish a rationale for therapeutic use. The conduct of preclinical studies is subject to federal regulations and requirements, including GLP regulations. The results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical trials, among other things, are submitted to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, may continue after the IND is submitted.

Human Clinical Trials in Support of an NDA

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include, among other things, the requirement that all research subjects provide their informed consent in writing before their participation in any clinical trial. Clinical trials are conducted under written study protocols detailing, among other things, the inclusion and exclusion criteria, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to a proposed clinical trial and places the trial on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA can place an IND on clinical hold at any point in development, and depending upon the scope of the hold, clinical trial(s) may not restart until resolution of the outstanding concerns to the FDA's satisfaction.

In addition, an IRB representing each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must conduct a continuing review and reapprove the study at least annually. The IRB must review and approve, among other things, the study protocol and informed consent information to be provided to study subjects. An IRB must operate in compliance with FDA regulations. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health for public dissemination on their ClinicalTrials.gov website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

- ***Phase 1.*** The drug is initially introduced into healthy human subjects or, in certain indications such as cancer, patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness and to determine optimal dosage.

- ***Phase 2.*** The drug is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.

- ***Phase 3.*** The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. In addition, IND safety reports must be submitted to the FDA for any of the following: serious and unexpected suspected adverse reactions; findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the drug; and any clinically important increase in the case of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients. The FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the clinical data submitted.

Submission of an NDA to the FDA

Assuming successful completion of required clinical testing and other requirements, the results of the preclinical studies and clinical trials, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the drug product for one or more indications. Under federal law, the submission of most NDAs is additionally subject to an application user fee, currently exceeding $2.1 million, and the sponsor of an approved NDA is also subject to annual product and establishment user fees, currently exceeding $104,000 per product and $554,000 per establishment. These fees are typically increased annually.

The FDA conducts a preliminary review of an NDA within 60 days of its receipt and informs the sponsor by the 74th day after the FDA's receipt of the submission to determine whether the application is sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA has agreed to specified performance goals in the review process of NDAs. Most such applications are meant to be reviewed within ten months from the date of filing, and most applications for "priority review" products are meant to be reviewed within six months of filing. The review process may be extended by the FDA for three additional months to consider new information or clarification

provided by the applicant to address an outstanding deficiency identified by the FDA following the original submission.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is or will be manufactured. These pre-approval inspections may cover all facilities associated with an NDA submission, including drug component manufacturing (such as active pharmaceutical ingredients), finished drug product manufacturing, and control testing laboratories. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP.

In addition, as a condition of approval, the FDA may require an applicant to develop a REMS. REMS use risk minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, seriousness of the disease, expected benefit of the product, expected duration of treatment, seriousness of known or potential adverse events, and whether the product is a new molecular entity. REMS can include medication guides, physician communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU may include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patient registries. The FDA may require a REMS before approval or post-approval if it becomes aware of a serious risk associated with use of the product. The requirement for a REMS can materially affect the potential market and profitability of a product.

The FDA is required to refer an application for a novel drug to an advisory committee or explain why such referral was not made. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Fast Track, Breakthrough Therapy and Priority Review Designations

The FDA is authorized to designate certain products for expedited review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs are fast track designation, breakthrough therapy designation and priority review designation.

Specifically, the FDA may designate a product for fast track review if it is intended, whether alone or in combination with one or more other drugs, for the treatment of a serious or life-threatening disease or condition, and it demonstrates the potential to address unmet medical needs for such a disease or condition. For fast track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a fast track product's NDA before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a fast track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees. However, the FDA's time period goal for reviewing a fast track application does not begin until the last section of the NDA is submitted. In addition, the fast track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Second, in 2012, Congress enacted the Food and Drug Administration Safety and Innovation Act, or FDASIA. This law established a new regulatory scheme allowing for expedited review of products

designated as "breakthrough therapies." A product may be designated as a breakthrough therapy if it is intended, either alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The FDA may take certain actions with respect to breakthrough therapies, including holding meetings with the sponsor throughout the development process; providing timely advice to the product sponsor regarding development and approval; involving more senior staff in the review process; assigning a cross-disciplinary project lead for the review team; and taking other steps to design the clinical trials in an efficient manner.

Third, the FDA may designate a product for priority review if it is a drug that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines, on a case- by-case basis, whether the proposed drug represents a significant improvement when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting drug reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on a marketing application from ten months to six months.

Accelerated Approval Pathway

The FDA may grant accelerated approval to a drug for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that the drug has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM, and that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. Drugs granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval.

For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a drug, such as an effect on IMM. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints, but has indicated that such endpoints generally may support accelerated approval where the therapeutic effect measured by the endpoint is not itself a clinical benefit and basis for traditional approval, if there is a basis for concluding that the therapeutic effect is reasonably likely to predict the ultimate clinical benefit of a drug.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a drug, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of drugs for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit.

The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the drug's clinical benefit. As a result, a drug candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, would allow the FDA to withdraw the drug from the market on an expedited basis. All promotional materials for drug candidates approved under accelerated regulations are subject to prior review by the FDA.

The FDA's Decision on an NDA

On the basis of the FDA's evaluation of the NDA and accompanying information, including the results of the inspection of the manufacturing facilities, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the NDA, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

If the FDA approves a product, it may limit the approved indications for use for the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess the drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Post-Approval Requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for supplemental applications with clinical data.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

Abbreviated New Drug Applications for Generic Drugs

In 1984, with passage of the Hatch-Waxman Amendments to the FDCA, Congress authorized the FDA to approve generic drugs that are the same as drugs previously approved by the FDA under the NDA provisions of the statute. To obtain approval of a generic drug, an applicant must submit an abbreviated new drug application, or ANDA, to the agency. In support of such applications, a generic manufacturer may rely on the preclinical and clinical testing previously conducted for a drug product previously approved under an NDA, known as the reference-listed drug, or RLD.

Specifically, in order for an ANDA to be approved, the FDA must find that the generic version is identical to the RLD with respect to the active ingredients, the route of administration, the dosage form, and the strength of the drug. At the same time, the FDA must also determine that the generic drug is "bioequivalent" to the innovator drug. Under the statute, a generic drug is bioequivalent to a RLD if "the rate and extent of absorption of the drug do not show a significant difference from the rate and extent of absorption of the listed drug..."

Upon approval of an ANDA, the FDA indicates whether the generic product is "therapeutically equivalent" to the RLD in its publication "Approved Drug Products with Therapeutic Equivalence Evaluations," also referred to as the "Orange Book." Physicians and pharmacists consider a therapeutic equivalent generic drug to be fully substitutable for the RLD. In addition, by operation of certain state laws and numerous health insurance programs, the FDA's designation of therapeutic equivalence often results in substitution of the generic drug without the knowledge or consent of either the prescribing physician or patient.

Under the Hatch-Waxman Amendments, the FDA may not approve an ANDA until any applicable period of non-patent exclusivity for the RLD has expired. The FDCA provides a period of five years of non-patent data exclusivity for a new drug containing a new chemical entity. For the purposes of this provision, a new chemical entity, or NCE, is a drug that contains no active moiety that has previously been approved by the FDA in any other NDA. An active moiety is the molecule or ion responsible for the physiological or pharmacological action of the drug substance. In cases where such NCE exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification, in which case the applicant may submit its application four years following the original product approval.

The FDCA also provides for a period of three years of exclusivity if the NDA includes reports of one or more new clinical investigations, other than bioavailability or bioequivalence studies, that were conducted by or for the applicant and are essential to the approval of the application. This three-year exclusivity period often protects changes to a previously approved drug product, such as a new dosage form, route of administration, combination or indication. Three-year exclusivity would be available for a drug product that contains a previously approved active moiety, provided the statutory requirement for a new clinical investigation is satisfied. Unlike five-year NCE exclusivity, an award of three-year exclusivity does not block the FDA from accepting ANDAs seeking approval for generic versions of the drug as of the date of approval of the original drug product. The FDA typically makes decisions about awards of data exclusivity shortly before a product is approved.

Hatch-Waxman Patent Certification and the 30-Month Stay

Upon approval of an NDA or a supplement thereto, NDA sponsors are required to list with the FDA each patent with claims that cover the applicant's product or an approved method of using the product. Each of the patents listed by the NDA sponsor is published in the Orange Book. When an ANDA applicant files its application with the FDA, the applicant is required to certify to the FDA concerning any patents listed for the reference product in the Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would.

Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicates that it is not seeking approval of a patented method of use, the ANDA application will not be approved until all the listed patents claiming the referenced product have expired (other than method of use patents involving indications for which the ANDA applicant is not seeking approval).

If the ANDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent

infringement lawsuit within 45 days after the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA until the earlier of 30 months after the receipt of the Paragraph IV notice, expiration of the patent, or a decision in the infringement case that is favorable to the ANDA applicant.

Pediatric Studies and Exclusivity

Under the Pediatric Research Equity Act of 2003, an NDA or supplement thereto must contain data that are adequate to assess the safety and effectiveness of the drug product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. With enactment of the FDASIA in 2012, sponsors must also submit pediatric study plans prior to the assessment data. Those plans must contain an outline of the proposed pediatric study or studies the applicant plans to conduct, including study objectives and design, any deferral or waiver requests, and other information required by regulation. The applicant, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other, and agree upon a final plan. The FDA or the applicant may request an amendment to the plan at any time.

The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Additional requirements and procedures relating to deferral requests and requests for extension of deferrals are contained in FDASIA. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if an NDA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve another application.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may designate a drug product as an "orphan drug" if it is intended to treat a rare disease or condition (generally meaning that it affects fewer than 200,000 individuals in the United States, or more in cases in which there is no reasonable expectation that the cost of developing and making a drug product available in the United States for treatment of the disease or condition will be recovered from sales of the product). A company must request orphan product designation before submitting an NDA. If the request is granted, the FDA will disclose the identity of the therapeutic agent and its potential use. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product with orphan status receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will be receiving orphan product exclusivity. Orphan product exclusivity means that the FDA may not approve any other applications for the same product for the same indication for seven years, except in certain limited circumstances. Competitors may

receive approval of different products for the indication for which the orphan product has exclusivity and may obtain approval for the same product but for a different indication. If a drug or drug product designated as an orphan product ultimately receives marketing approval for an indication broader than what was designated in its orphan product application, it may not be entitled to exclusivity.

Patent Term Restoration and Extension

A patent claiming a new drug product may be eligible for a limited patent term extension under the Hatch- Waxman Act, which permits a patent restoration of up to five years for patent term lost during product development and the FDA regulatory review. The restoration period granted is typically one-half the time between the effective date of an IND and the submission date of an NDA, plus the time between the submission date of an NDA and the ultimate approval date. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved drug product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple drugs for which approval is sought can only be extended in connection with one of the approvals. The USPTO reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

Review and Approval of Drug Products in the European Union

In order to market any product outside of the United States, a company must also comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of products. Whether or not it obtains FDA approval for a product, the company would need to obtain the necessary approvals by the comparable foreign regulatory authorities before it can commence clinical trials or marketing of the product in those countries or jurisdictions. The approval process ultimately varies between countries and jurisdictions and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries and jurisdictions might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country or jurisdiction may negatively impact the regulatory process in others.

Procedures Governing Approval of Drug Products in the European Union

Pursuant to the European Clinical Trials Directive, a system for the approval of clinical trials in the European Union has been implemented through national legislation of the member states. Under this system, an applicant must obtain approval from the competent national authority of a European Union member state in which the clinical trial is to be conducted. Furthermore, the applicant may only start a clinical trial after a competent ethics committee has issued a favorable opinion. Clinical trial application must be accompanied by an investigational medicinal product dossier with supporting information prescribed by the European Clinical Trials Directive and corresponding national laws of the member states and further detailed in applicable guidance documents.

To obtain marketing approval of a product under European Union regulatory systems, an applicant must submit a marketing authorization application, or MAA, either under a centralized or decentralized procedure. The centralized procedure provides for the grant of a single marketing authorization by the European Commission that is valid for all European Union member states. The centralized procedure is compulsory for specific products, including for medicines produced by certain biotechnological processes, products designated as orphan medicinal products, advanced therapy products and products with a new active substance indicated for the treatment of certain diseases. For products with a new active substance indicated for the treatment of other diseases and products that

are highly innovative or for which a centralized process is in the interest of patients, the centralized procedure may be optional.

Under the centralized procedure, the Committee for Medicinal Products for Human Use, or the CHMP, established at the EMA is responsible for conducting the initial assessment of a product. The CHMP is also responsible for several post-authorization and maintenance activities, such as the assessment of modifications or extensions to an existing marketing authorization. Under the centralized procedure in the European Union, the maximum timeframe for the evaluation of an MAA is 210 days, excluding clock stops, when additional information or written or oral explanation is to be provided by the applicant in response to questions of the CHMP. Accelerated evaluation might be granted by the CHMP in exceptional cases, when a medicinal product is of major interest from the point of view of public health and in particular from the viewpoint of therapeutic innovation. In this circumstance, the EMA ensures that the opinion of the CHMP is given within 150 days.

The decentralized procedure is available to applicants who wish to market a product in various European Union member states where such product has not received marketing approval in any European Union member states before. The decentralized procedure provides for approval by one or more other, or concerned, member states of an assessment of an application performed by one member state designated by the applicant, known as the reference member state. Under this procedure, an applicant submits an application based on identical dossiers and related materials, including a draft summary of product characteristics, and draft labeling and package leaflet, to the reference member state and concerned member states. The reference member state prepares a draft assessment report and drafts of the related materials within 210 days after receipt of a valid application. Within 90 days of receiving the reference member state's assessment report and related materials, each concerned member state must decide whether to approve the assessment report and related materials.

If a member state cannot approve the assessment report and related materials on the grounds of potential serious risk to public health, the disputed points are subject to a dispute resolution mechanism and may eventually be referred to the European Commission, whose decision is binding on all member states.

Data and Market Exclusivity in the European Union

In the European Union, new chemical entities qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity. This data exclusivity, if granted, prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic (abbreviated) application for eight years, after which generic marketing authorization can be submitted, and the innovator's data may be referenced, but not approved for two years. The overall ten-year period will be extended to a maximum of eleven years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies. Even if a compound is considered to be a new chemical entity and the sponsor is able to gain the prescribed period of data exclusivity, another company nevertheless could also market another version of the product if such company can complete a full MAA with a complete database of pharmaceutical test, preclinical tests and clinical trials and obtain marketing approval of its product.

In order to market any product outside of the United States, a company must also comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of drug products. Whether or not it obtains FDA approval for a product, the company would need to obtain the necessary approvals by the comparable foreign regulatory authorities before it can commence clinical trials or marketing of the product in those

countries or jurisdictions. The approval process ultimately varies between countries and jurisdictions and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries and jurisdictions might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country or jurisdiction may negatively impact the regulatory process in others.

Periods of Authorization and Renewals

Marketing authorization is valid for five years in principle and the marketing authorization may be renewed after five years on the basis of a re-evaluation of the risk-benefit balance by the EMA or by the competent authority of the authorizing member state. To this end, the marketing authorization holder must provide the EMA or the competent authority with a consolidated version of the file in respect of quality, safety and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. Once renewed, the marketing authorization is valid for an unlimited period, unless the Commission or the competent authority decides, on justified grounds relating to pharmacovigilance, to proceed with one additional five-year renewal. Any authorization which is not followed by the actual placing of the drug on the European Union market (in case of centralized procedure) or on the market of the authorizing member state within three years after authorization ceases to be valid (the so-called sunset clause).

Orphan Drug Designation and Exclusivity

Regulation 141/2000 provides that a drug shall be designated as an orphan drug if its sponsor can establish: that the product is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition affecting not more than five in ten thousand persons in the European Community when the application is made, or that the product is intended for the diagnosis, prevention or treatment of a life-threatening, seriously debilitating or serious and chronic condition in the European Community and that without incentives it is unlikely that the marketing of the drug in the European Community would generate sufficient return to justify the necessary investment. For either of these conditions, the applicant must demonstrate that there exists no satisfactory method of diagnosis, prevention or treatment of the condition in question that has been authorized in the European Community or, if such method exists, the drug will be of significant benefit to those affected by that condition.

Regulation 847/2000 sets out criteria and procedures governing designation of orphan drugs in the European Union. Specifically, an application for designation as an orphan product can be made any time prior to the filing of an application for approval to market the product. Marketing authorization for an orphan drug leads to a ten-year period of market exclusivity. This period may, however, be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan drug designation, for example because the product is sufficiently profitable not to justify market exclusivity. Market exclusivity can be revoked only in very selected cases, such as consent from the marketing authorization holder, inability to supply sufficient quantities of the product, demonstration of "clinically relevant superiority" by a similar medicinal product, or, after a review by the Committee for Orphan Medicinal Products, requested by a member state in the fifth year of the marketing exclusivity period (if the designation criteria are believed to no longer apply). Medicinal products designated as orphan drugs pursuant to Regulation 141/2000 shall be eligible for incentives made available by the European Community and by the member states to support research into, and the development and availability of, orphan drugs.

Pharmaceutical Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of products approved by the FDA and other government authorities. Sales of products will depend, in part, on the extent to which third-party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers and managed care organizations, provide coverage, and establish adequate reimbursement levels for, such products. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the prices charged for medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable regulatory approvals. A payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Third-party reimbursement may not be sufficient to maintain price levels high enough to realize an appropriate return on investment in product development.

The containment of healthcare costs also has become a priority of federal, state and foreign governments and the prices of drugs have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results.

Outside the United States, ensuring adequate coverage and payment for our product candidates will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory marketing approval for a product and may require us to conduct a clinical trial that compares the cost effectiveness of our product candidates or products to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in our commercialization efforts.

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that drug products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular drug candidate to currently available therapies. For example, the European Union provides options for its member states to restrict the range of drug products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. European Union member states may approve a specific price for a drug product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the drug product on the market. Other member states allow companies to fix their own prices for drug products, but monitor and control company profits. The downward pressure on health care costs in general, particularly prescription drugs, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert competitive pressure that may reduce pricing within a country. Any country that has price controls or reimbursement limitations for drug products may not allow favorable reimbursement and pricing arrangements.

Healthcare Law and Regulation

Healthcare providers, physicians and third-party payors play a primary role in the recommendation and prescription of drug products that are granted marketing approval. Arrangements with third-party payors and customers are subject to broadly applicable fraud and abuse and other healthcare laws and regulations. Such restrictions under applicable federal and state healthcare laws and regulations, include the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid;

- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created federal criminal laws that prohibit, among other things, knowingly and willingly executing, or attempting to execute, a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, which also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;

- the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services;

- the federal transparency requirements under the Patient Protection and Affordable Care Act, as amended by the Health Care Education Reconciliation Act, or the Affordable Care Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to payments and other transfers of value to physicians and teaching hospitals and physician ownership and investment interests; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to healthcare items or services that are reimbursed by non-governmental third-party payors, including private insurers.

Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Healthcare Reform

There have been a number of federal and state proposals during the last few years regarding the pricing of pharmaceutical and biopharmaceutical products, government control and other changes to the healthcare system in the United States.

By way of example, the United States and state governments continue to propose and pass legislation designed to reduce the cost of healthcare. In March 2010, the United States Congress enacted the Affordable Care Act, which, among other things, includes changes to the coverage and payment for drug products under government health care programs. The Affordable Care Act:

- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of "average manufacturer price," or AMP, for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices;
- addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- expanded the types of entities eligible for the 340B drug discount program; and
- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide a 50% point-of-sale-discount off the negotiated price of applicable brand drugs to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D.

Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2024 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare.

Employees

As of December 31, 2014, we had 31 employees, 23 of whom were primarily engaged in research and development activities. A total of 17 employees have Ph.D. degrees. None of our employees is represented by a labor union and we believe our relations with our employees are good.

Facilities

Our offices are located in Cambridge, Massachusetts and consist of approximately 15,000 square feet of leased office and laboratory space. The lease expires in June 2017.

Legal Proceedings

We are not currently a party to any material legal proceedings.

MANAGEMENT

The following table sets forth the name, age as of December 31, 2014 and position of each of our executive officers and directors.

Name	Age	Position
Jill C. Milne, Ph.D.	47	President, Chief Executive Officer and Director
Ian C. Sanderson	53	Chief Financial Officer and Treasurer
Michael Jirousek, Ph.D.	56	Chief Scientific Officer
Joanne M. Donovan, M.D., Ph.D.	58	Chief Medical Officer
Michael Ross, Ph.D.(1)(2)	65	Chairman of the Board of Directors
Nicholas Galakatos, Ph.D.(2)	57	Director
Jean George	56	Director
Ron Laufer, M.D.	47	Director
Kenneth Bate(1)(2)	64	Director

(1) Member of the Audit Committee

(2) Member of the Compensation Committee

Jill C. Milne, Ph.D., is a co-founder of our company and has served as a member of our board of directors and as our President and Chief Executive Officer since June 2008. Prior to co-founding our company, Dr. Milne worked as head of discovery biology at Sirtris Pharmaceuticals, a biotechnology company, from 2004 to 2008, when it was acquired by GlaxoSmithKline. From 1998 to 2004, Dr. Milne worked at Pfizer Global Research and Development, where she served as the worldwide head of the Drug Pfinder Program and head of the Enzyme Target Group at the Pfizer Discovery Technology Center in Cambridge, Massachusetts. Prior to joining Pfizer, she was an American Cancer Society postdoctoral fellow in the department of biological chemistry and molecular pharmacology at Harvard Medical School from 1995 to 1998. Dr. Milne holds a Ph.D. from Harvard University and a B.A. in biological chemistry from Wellesley College. We believe that Dr. Milne is qualified to serve on our board of directors because of her extensive leadership experience in the life sciences industry and her extensive knowledge of our company based on her role as co-founder and Chief Executive Officer.

Ian C. Sanderson has served as our Chief Financial Officer since December 2013 and our Treasurer since January 2014. Prior to joining Catabasis, Mr. Sanderson worked as a senior advisor at JSB-Partners, L.P., a global life sciences advisory firm specializing in strategic partnering and mergers and acquisitions transactions, from August 2012 to August 2013. From 1992 to August 2012, Mr. Sanderson worked at at Cowen and Company, LLC, a financial services firm, in positions of increasing responsibility, ultimately as a managing director and senior research analyst. Prior to Cowen, Mr. Sanderson worked at Houlihan Lokey Howard and Zukin, a financial services firm, from 1989 to 1992, at Cambridge Associates, an investment consulting firm, from 1985 to 1987, and at U.S. Surgical Corporation (now Covidien), a global healthcare products company, from 1983 to 1985. Mr. Sanderson holds an M.B.A. from the The Wharton School of the University of Pennsylvania and a B.A. in political economy from Williams College.

Michael Jirousek, Ph.D., is a co-founder of our company and has served as our Chief Scientific Officer since June 2008. From 2006 to 2008, Dr. Jirousek served as senior vice president of research at Sirtris Pharmaceuticals. From 2001 to 2006, Dr. Jirousek served as Senior Director and Head of the Diabetes Therapeutic Area for Pfizer Inc., a pharmaceutical company. From 1998 to 2001, Dr. Jirousek was at Abbott Laboratories, serving as a Metabolic Department Head, and prior to that he worked at Eli Lilly as a Scientist and Program Leader from 1993 to 1998 and at American Home Products Cyanamid as a Medicinal Chemist from 1991 to 1993. Dr. Jirousek was a Post-Doctoral fellow at

Harvard University from 1989 to 1991 and holds a Ph.D. in Chemistry from Case Western University and a B.S. in Chemistry from Kent State University.

Joanne M. Donovan, M.D., Ph.D., has served as our Chief Medical Officer since July 2011. In addition, since 1989, she worked as a staff physician at the VA Boston Healthcare System, where she was formerly Chief of Gastroenterology from 1997 to 1998. Dr. Donovan has held an appointment at Harvard Medical School since 1990, most recently as associate clinical professor of medicine. From 1998 to July 2011, Dr. Donovan served in positions of increasing responsibility, ultimately as vice president of clinical development, at Genzyme Corporation, a publicly traded biotechnology company, which she joined through its acquisition of GelTex. Dr. Donovan holds a Ph.D. in medical engineering and medical physics from the Massachusetts Institute of Technology, an M.D. from Harvard Medical School and an S.B. from the Massachusetts Institute of Technology.

Michael Ross, Ph.D., has served as a member of our board of directors since April 2010 and as Chairman since October 2010. Since 2002, Dr. Ross has served as a Managing Partner at SV Life Sciences Advisers, LLC, a venture capital firm that he joined as a venture partner in 2001. Previously, Dr. Ross served as the Chief Executive Officer of CyThera, Carta Proteomics, MetaXen and Arris Pharmaceutical. Earlier in his career, Dr. Ross was employed at Genentech, serving in several roles, including Vice President of Development and later Vice President of Medicinal and Biomolecular Chemistry. Dr. Ross currently serves on the board of directors of Ophthotech Corporation as well as the boards of directors of several private companies, including Adimab and Sutro Biopharma, and the Board of Overseers of the Thayer School of Engineering at Dartmouth College. Dr. Ross received an A.B. from Dartmouth College and a Ph.D. in chemistry from the California Institute of Technology and completed post doctorate training in molecular biology at Harvard University. We believe that Dr. Ross is qualified to serve on our board of directors because of his extensive executive leadership experience and knowledge of the life sciences industry and his service on the board of directors of other life sciences companies.

Nicholas Galakatos, Ph.D., has served as a member of our board of directors and chair of the compensation committee since February 2012. Dr. Galakatos is a co-founder of Clarus Ventures, a health care and life science venture capital firm, where he has served as Managing Director since its inception in 2005. Dr. Galakatos has also served as a General Partner of MPM Asset Management II LLC since 2000 and as a General Partner of BioVentures III GP, LP since 2002. From 1997 to 2000, Dr. Galakatos served as Vice President, New Business and a member of the Management Team at Millennium Pharmaceuticals. He was a founder of Millennium Predictive Medicine and TransForm Pharmaceuticals, where he was also the Chairman and founding chief executive officer. Dr. Galakatos is a director of Portola Pharmaceuticals, NanoString Technologies and Ophthotech Corporation, and formerly was the Lead Director of Affymax and a director of Critical Therapeutics and Aveo Pharmaceuticals. Dr. Galakatos received a B.A. in chemistry from Reed College and a Ph.D. in organic chemistry from the Massachusetts Institute of Technology, and performed postdoctoral studies in molecular biology at Harvard Medical School. We believe that Dr. Galakatos is qualified to serve on our board of directors because of his extensive experience as a venture capital investor and a director of several public companies.

Jean George has served as a member of our board of directors since October 2013. Since February 2002, she has been a Managing Director at Advanced Technology Ventures, a venture capital fund, where she currently serves as the East Coast lead partner for healthcare investments. Since March 2012, Ms. George has served as Managing Director at LSV Capital Management, a venture capital firm. Ms. George currently serves as a member of the board of directors of the public companies Acceleron Pharma, Calithera Biosciences and Zeltiq Aesthetics, and previously served as a member of the board of directors of Portola Pharmaceuticals from 2005 to 2013. Ms. George also serves on the boards of the private companies Hydra Biosciences and Thrasos Innovation. Ms. George holds a B.S. in Biology from the University of Maine and an M.B.A. from Simmons College Graduate School of

Management. Because of Ms. George's extensive investment and financial experience, we believe she is able to add valuable expertise in guiding the strategic direction of our board of directors.

Ron Laufer, M.D., has served as a member of our board of directors since April 2011. Dr. Laufer has worked as the Senior Managing Director at MedImmune Ventures, Inc. since 2010. He served as an adjunct professor of business administration at the Kelley School of Business at Indiana University from 2009 to 2014. From 2007 to 2008, he served as a managing director at Visium Asset Management, a healthcare-focused investment firm, and co-founded Lilly Ventures, the venture capital arm of Eli Lilly & Company, in 2001. Dr. Laufer currently serves as a member of the boards of directors of the private companies Adheron Therapeutics, G1 Therapeutics, NeuProtect and VentiRx Pharmaceuticals. Dr. Laufer received his B.Sci., M.D. and M.P.H. from Hebrew University, and his M.B.A. from the Harvard Business School. We believe that Dr. Laufer's management experience and more than 18 years of experience in life sciences make him a valuable contributor to our board of directors.

Kenneth Bate has served as a member of our board of directors since January 2014. Mr. Bate is currently an independent consultant. From May 2009 until January 2012, Mr. Bate was the President and Chief Executive Officer of Archemix, a privately held biotechnology company. From January 2007 to April 2009, Mr. Bate was President and Chief Executive Officer of NitroMed, a public pharmaceutical company. From March 2006 until January 2007, Mr. Bate was Chief Operating Officer and Chief Financial Officer of NitroMed. From January 2005 to March 2006, Mr. Bate was employed at JSB-Partners, a firm that he co-founded. From 2002 to January 2005, Mr. Bate was head of commercial operations and Chief Financial Officer at Millennium Pharmaceuticals. Mr. Bate has served as a member of the Board of Directors of Cubist Pharmaceuticals, Inc., a public biopharmaceutical company, since June 2003 and as its non-executive Chair since March 2011. Mr. Bate is a director of four other public biopharmaceutical companies, AVEO Pharmaceuticals, BioMarin Pharmaceuticals, Genocea Biosciences and Epizyme Pharmaceuticals. During the last five years, Mr. Bate also served as a director of NitroMed and Coley Pharmaceutical Group, a biopharmaceutical company, which was a public company during the period of Mr. Bate's service. He holds a B.A. in Chemistry from Williams College and an M.B.A. from The Wharton School of the University of Pennsylvania. We believe Mr. Bate's qualifications to serve on our board of directors include his operating, finance, commercial, transactional and senior management experience in the industry, as well as his experience serving on the boards of directors of other public companies in the life sciences industry.

Board Composition and Election of Directors

Board Composition

Our board of directors currently consists of six members. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

Our certificate of incorporation and bylaws that will become effective upon the closing of this offering provide that the authorized number of directors may be changed only by resolution of our board of directors. Our certificate of incorporation and bylaws will also provide that our directors may be removed only for cause by the affirmative vote of the holders of 75% of our shares of capital stock present in person or by proxy and entitled to vote, and that any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

In accordance with the terms of our certificate of incorporation and bylaws that will become effective upon the closing of this offering, our board of directors will be divided into three classes,

class I, class II and class III, with members of each class serving staggered three-year terms. Upon the closing of this offering, the members of the classes will be divided as follows:

- the class I directors will be , and , and their term will expire at the annual meeting of stockholders to be held in 2016;
- the class II directors will be , and , and their term will expire at the annual meeting of stockholders to be held in 2017; and
- the class III directors will be , and , and their term will expire at the annual meeting of stockholders to be held in 2018.

Upon the expiration of the term of a class of directors, directors in that class will be eligible to be elected for a new three-year term at the annual meeting of stockholders in the year in which their term expires.

Director Independence

Applicable NASDAQ Stock Market, or NASDAQ, rules require a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. In addition, the NASDAQ rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Exchange Act, and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under applicable NASDAQ rules, a director will only qualify as an "independent director" if, in the opinion of the listed company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries. In order to be considered independent for purposes of Rule 10C-1, the board must consider, for each member of a compensation committee of a listed company, all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: the source of compensation of the director, including any consulting advisory or other compensatory fee paid by such company to the director; and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

In , our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that each of our directors, with the exception of Dr. Milne, is an "independent director" as defined under applicable NASDAQ rules, including, in the case of all the members of our audit committee, the independence criteria set forth in Rule 10A-3 under the Exchange Act, and in the case of all the members of our compensation committee, the independence criteria set forth in Rule 10C-1 under the Exchange Act. In making such determination, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances that our board of directors deemed relevant in determining his or her independence, including the beneficial ownership of our capital stock by each non-employee director. Dr. Milne is not an independent director under these rules because she is our President and Chief Executive Officer.

There are no family relationships among any of our directors or executive officers.

Board Committees

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee. Each of these committees will operate under a charter that has been approved by our board of directors. The composition of each committee will be effective as of the date of this prospectus.

Audit Committee

Effective at the time of this offering, the members of our audit committee will be Kenneth Bate, and , and Mr. Bate will be the chair of the audit committee. Our audit committee's responsibilities will include:

- appointing, approving the compensation of, and assessing the independence of our registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of reports from that firm;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures;
- monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- overseeing our internal audit function, if any;
- overseeing our risk assessment and risk management policies;
- establishing policies regarding hiring employees from our independent registered public accounting firm and procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our internal auditing staff, if any, our independent registered public accounting firm and management;
- reviewing and approving or ratifying any related person transactions; and
- preparing the audit committee report required by Securities and Exchange Commission, or SEC, rules.

All audit and non-audit services, other than *de minimis* non-audit services, to be provided to us by our independent registered public accounting firm must be approved in advance by our audit committee.

Our board of directors has determined that Kenneth Bate is an "audit committee financial expert" as defined in applicable SEC rules and that each of the members of our audit committee possesses the financial sophistication required for audit committee members under NASDAQ rules. We believe that the composition of our audit committee will meet the requirements for independence under current NASDAQ and SEC rules and regulations.

Compensation Committee

Effective at the time of this offering, the members of our compensation committee will be , and , and will be the chair of the compensation committee. Our compensation committee's responsibilities will include:

- reviewing and approving, or making recommendations to our board of directors with respect to, the compensation of our chief executive officer and our other executive officers;
- overseeing an evaluation of our senior executives;
- overseeing and administering our cash and equity incentive plans;
- reviewing and making recommendations to our board of directors with respect to director compensation and management succession planning;
- reviewing and discussing annually with management our "Compensation Discussion and Analysis" disclosure if and to the extent then required by SEC rules; and
- preparing the compensation committee report if and to the extent then required by SEC rules.

We believe that the composition of our compensation committee will meet the requirements for independence under current NASDAQ and SEC rules and regulations.

Nominating and Corporate Governance Committee

Effective at the time of this offering, the members of our nominating and corporate governance committee will be , and , and will be the chair of the nominating and corporate governance committee. Our nominating and corporate governance committee's responsibilities will include:

- identifying individuals qualified to become members of our board of directors;
- recommending to our board of directors the persons to be nominated for election as directors and to each of our board's committees;
- reviewing and making recommendations to our board with respect to our board leadership structure and board committee structure;
- making recommendations to our board with respect to accepting director resignations;
- reviewing and making recommendations to our board with respect to management succession planning;
- developing and recommending to our board of directors corporate governance principles; and
- overseeing an annual evaluation of our board of directors and an annual review of succession planning for senior executives.

We believe that the composition of our nominating and corporate governance committee will meet the requirements for independence under current NASDAQ and SEC rules and regulations.

Compensation Committee Interlocks and Insider Participation

None of our executive officers serves, or in the past year has served, as a member of the board of directors or compensation committee, or other committee serving an equivalent function, of any other entity that has one or more of its executive officers serving as a member of our board of directors or our compensation committee. None of the members of our compensation committee is, or has ever been, an officer or employee of our company.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer principal accounting officer or controller, or persons performing similar functions. Following this offering, we will post a copy of the code on the Corporate Governance section of our website, which is located at www.catabasis.com. If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K.

EXECUTIVE COMPENSATION

This section describes the material elements of compensation awarded to, earned by or paid to each of our named executive officers in 2014. Our named executive officers for 2014 are Jill C. Milne, Ian C. Sanderson and Michael Jirousek. This section also provides qualitative information regarding the manner and context in which compensation is awarded to and earned by our executive officers and is intended to place in perspective the data presented in the tables and narrative that follow.

Summary Compensation Table

The following table sets forth information regarding compensation awarded to, earned by or paid to our named executive officers during 2014.

Name and principal position	Year	Salary ($)	Bonus ($)(1)	Option Awards ($)(2)	All Other Compensation ($)(3)	Total ($)
Jill C. Milne, Ph.D.(4) *President and Chief Executive Officer*	2014	375,000		302,264	1,290	
Ian C. Sanderson *Chief Financial Officer and Treasurer*	2014	311,554		564,315	1,310	
Michael Jirousek, Ph.D. *Chief Scientific Officer*	2014	329,197		161,208	1,290	

(1) The amounts reported in the "Bonus" column represent discretionary annual cash bonuses awarded to our named executive officers.

(2) The amounts reported in the "Option Awards" column reflect the aggregate grant date fair value of share-based compensation awarded during the year computed in accordance with the provisions of Financial Accounting Standards Board Accounting Standard Codification, or ASC, Topic 718. See Note 12 to our financial statements appearing at the end of this prospectus regarding assumptions underlying the valuation of equity awards.

(3) The amounts reported in the "All Other Compensation" column reflect, for each named executive officer, the cost to us of life insurance premiums paid for the named executive officer.

(4) Dr. Milne also serves as a member of our board of directors but does not receive any additional compensation for her service as a director.

Narrative to Summary Compensation Table

In 2014, we paid annual base salaries of $375,000 to Dr. Milne, $311,554 to Mr. Sanderson and $329,197 to Dr. Jirousek. We use base salaries to recognize the experience, skills, knowledge and responsibilities required of all our employees, including our named executive officers. None of our named executive officers is currently party to an employment agreement or other agreement or arrangement that provides for automatic or scheduled increases in base salary.

We do not have a formal performance-based bonus plan. From time to time, our board of directors has approved discretionary annual cash bonuses to our named executive officers with respect to their prior year performance. Dr. Milne, Mr. Sanderson and Dr. Jirousek earned cash bonuses of $, $ and $, respectively, for services performed during 2014.

Although we do not have a formal policy with respect to the grant of equity incentive awards to our executive officers, or any formal equity ownership guidelines applicable to them, we believe that equity grants provide our executives with a strong link to our long-term performance, create an ownership culture and help to align the interests of our executives and our stockholders. In addition, we believe that equity grants with a time-based vesting feature promote executive retention because this feature incents our executive officers to remain in our employment during the vesting period. Accordingly, our board of directors periodically reviews the equity incentive compensation of our named executive officers and from time to time may grant equity incentive awards to them in the form of stock options. In 2014, we granted Dr. Milne an option to purchase 750,000 shares of our common stock, Mr. Sanderson options to purchase an aggregate of 1,400,220 shares of our common stock and Dr. Jirousek an option to purchase 400,000 shares of our common stock.

Outstanding Equity Awards at Year End

The following table sets forth information regarding outstanding equity awards held by our named executive officers as of December 31, 2014, which consisted entirely of stock options:

Name	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price ($/share)	Option Expiration Date
Jill C. Milne, Ph.D.	1,015,267(1)	67,684	0.13	2/28/2021
	214,848(2)	71,616	0.18	12/17/2022
	252,142(3)	165,197	0.18	12/17/2022
	176,134(4)	191,449	0.18	4/16/2023
	—(5)	750,000	0.53	3/18/2024
Ian C. Sanderson	291,205(6)	784,015	0.53	3/18/2024
	—(5)	325,000	0.53	3/18/2024
Michael Jirousek, Ph.D.	1,015,267(1)	67,684	0.13	2/28/2021
	214,848(2)	71,616	0.18	12/17/2022
	252,142(3)	165,197	0.18	12/17/2022
	176,134(4)	191,449	0.18	4/16/2023
	—(5)	400,000	0.53	3/18/2024

(1) This option was granted on March 1, 2011 and vested as to 25% of the shares on March 1, 2012 with the remaining 75% of the shares vesting in equal monthly installments thereafter through March 1, 2015.

(2) This option was granted on December 18, 2012 and vested as to 25% of the shares on December 1, 2012 with the remaining 75% of the shares vesting in equal monthly installments thereafter through December 1, 2015.

(3) This option was granted on December 18, 2012 and vested as to 25% of the shares on July 10, 2013 with the remaining 75% of the shares vesting in equal monthly installments thereafter through July 10, 2016.

(4) This option was granted on April 17, 2013 and vested as to 25% of the shares on January 18, 2014 with the remaining 75% of the shares vesting in equal monthly installments thereafter through January 18, 2017.

(5) This option was granted on March 19, 2014 and vested as to 25% of the shares on January 1, 2015 with the remaining 75% of the shares vesting in equal monthly installments thereafter through January 1, 2018.

(6) This option was granted on March 19, 2014 and vested as to 25% of the shares on November 1, 2014 with the remaining 75% of the shares vesting in equal monthly installments thereafter through November 1, 2017.

Agreements with Our Named Executive Officers

We have entered into written employment agreements or offer letters with each of our named executive officers. These agreements set forth the terms of the named executive officer's compensation, including his or her initial base salary, severance and an annual cash bonus opportunity. In addition, the agreements provide that the named executive officers are eligible to participate in company-sponsored benefit programs that are available generally to all of our employees. In connection with the commencement of their employment with us, our named executive officers executed our standard invention and non-disclosure agreement and non-competition and non-solicitation agreement.

The agreements for Dr. Milne and Dr. Jirousek provide that each is eligible to receive an annual cash bonus, as determined by the board of directors in its sole discretion, with a target of a specified percentage of the named executive officer's annual base salary earned in such particular calendar year, which percentage shall be subject to adjustment from time to time by the board of directors in its sole discretion. The board of directors determines the amount of the bonus, if any, based on its assessment of the named executive officer's performance and that of the company against appropriate goals established annually by the board of directors after consultation with the named executive officer. The current target annual bonus percentages for Dr. Milne and Dr. Jirousek are 40% and 35%, respectively. Mr. Sanderson's offer letter provides for an annual cash bonus of up to 30% of his annual base salary, as determined in the sole discretion of the board of directors.

Potential Payments upon Termination or Change in Control

Upon execution and effectiveness of a separation agreement and release of all claims, each named executive officer is entitled to severance payments if his or her employment is terminated under specified circumstances pursuant to the terms of his or her employment agreement or offer letter, subject to providing a release of claims. Severance payments to the officers could be delayed for six months in certain circumstances for compliance with Section 409A of the Internal Revenue Code of 1986, as amended, or the Code. On any termination of employment, the executive officer will receive any base salary and bonus earned but not paid through the date of termination and any vacation time accrued but not used to that date and any business expenses incurred but not un-reimbursed on the date of termination.

If we terminate Dr. Milne's or Dr. Jirousek's employment without "cause" or such named executive officer terminates his or her employment with us for "good reason," each as defined in accordance with the terms of his or her employment agreement, we will be obligated to pay, in addition to the aforementioned payments:

- an amount equal to up to 100% of his or her annual base salary, payable in equal installments in accordance with our standard payroll practices, for a period of 12 months;
- a bonus payment in an amount equal to 50% of the average annual bonus paid to the executive officer over the three calendar years preceding the year of termination, prorated for the portion of the calendar year he or she worked in the year of termination; and
- premiums for continuation health coverage under COBRA for up to 12 months.

In the event Dr. Milne or Dr. Jirousek commences any employment substantially similar to his or her employment with the company (based upon responsibility, reporting level, or compensation), any remaining portion of the base salary payment will cease to be payable on the date 60 days after the commencement of such new employment.

Within 12 months following a change of control, under the terms of the employment agreements, if Dr. Milne's or Dr. Jirousek's employment is terminated by us or our successor without cause or by such executive officer for good reason, then all of Dr. Milne's or Dr. Jirousek's remaining unvested stock

options and restricted stock will automatically vest 15 days following the execution and effectiveness of a separation agreement and release of all claims, and we will be obligated to pay an amount equal to his or her annual base salary, payable as a lump sum, a bonus payment equal to 50% of the average annual bonus paid to the executive officer over the three calendar years preceding the year of termination, and premiums for continuation health coverage under COBRA for up to 12 months.

If we terminate Mr. Sanderson's employment without "cause" as defined in his offer letter, we will be obligated to pay an amount equal to his monthly base salary, payable in installments in accordance with our standard payroll practice, for a period of nine months. In the event Mr. Sanderson commences any employment substantially similar to his employment with the company (based upon responsibility, reporting level, or compensation) within such nine-month period, any remaining payment will be reduced such that the number of months of base salary will be equal to that number of months between the date of termination and the date of commencement of such new employment.

Stock Option and Other Compensation Plans

The two equity incentive plans described in this section are our amended and restated 2008 equity incentive plan, as amended to date, or the 2008 plan, and our 2015 stock incentive plan, or the 2015 plan. Prior to this offering, we granted awards to eligible participants under the 2008 plan. Following the closing of this offering, we expect to grant awards to eligible participants under the 2015 plan.

Amended and Restated 2008 Equity Incentive Plan

The 2008 plan provides for the grant of incentive stock options, nonqualified stock options, restricted stock awards, stock appreciation rights and performance units and performance share awards. Our employees, directors, and consultants are eligible to receive awards under our 2008 plan; however, incentive stock options may only be granted to our employees. Our board of directors administers the 2008 plan.

The 2008 plan provides that a maximum of 21,838,299 shares of our common stock are authorized for issuance under the plan. The 2008 plan does not have a fixed expiration date, however, no incentive stock options may be granted under the 2008 plan after December 30, 2018 and our board of directors may amend, suspend or terminate the 2008 plan at any time.

Upon the occurrence of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of our common stock other than an ordinary cash dividend, we shall equitably adjust (or make substitute awards, if applicable), in the manner determined by our board of directors:

- the number and class of securities available under the 2008 plan;
- the number and class of securities and exercise price per share of each outstanding option;
- the number of shares subject to and the repurchase price per share subject to each outstanding restricted stock award; and
- the terms of each other outstanding award under the 2008 plan.

Upon the occurrence of a merger or consolidation of our company with or into another entity as a result of which all of our common stock is converted into or exchanged for the right to receive cash, securities or other property or is cancelled; an exchange of all of our common stock for cash, securities or other property pursuant to a share exchange transaction; or a liquidation or dissolution of our company, our board of directors may, on such terms as our board of directors determines, take any one

or more of the following actions pursuant to the 2008 plan, as to some or all outstanding awards, other than restricted stock awards:

- provide that awards shall be assumed, or substantially equivalent awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof);
- upon written notice to a plan participant, provide that the participant's unexercised awards will terminate immediately prior to the consummation of such transaction unless exercised by the participant within a specified period;
- provide that outstanding awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an award shall lapse, in whole or in part prior to or upon such transaction;
- in the event of a transaction under the terms of which holders of common stock will receive upon consummation thereof a cash payment for each share surrendered in the transaction, make or provide for a cash payment to a plan participant;
- provide that, in connection with a liquidation of dissolution of the company, awards shall convert into the right to receive liquidation proceeds; or
- any combination of the foregoing.

Our board of directors is not obligated under the 2008 plan to treat all awards, all awards held by a participant, or all awards of the same type, identically.

Upon the occurrence of any corporate transaction described above, other than our liquidation or dissolution, our repurchase and other rights under each outstanding restricted stock award will continue for the benefit of our successor and will, unless our board of directors determines otherwise, apply to the cash, securities or other property which our common stock was converted into or exchanged for in the transaction in the same manner and to the same extent as they applied to the common stock subject to the restricted stock award. Upon our liquidation or dissolution, except to the extent specifically provided to the contrary in the restricted stock award agreement or any other agreement between the plan participant and us, all restrictions and conditions on all restricted stock awards then outstanding will automatically be deemed terminated or satisfied.

Our board of directors, in its sole discretion, may accelerate the exercisability of any option or time at which any restrictions shall lapse or be removed from any restricted stock award, as the case may be.

As of December 31, 2014, there were options to purchase 15,747,837 shares of our common stock outstanding under the 2008 plan, at a weighted-average exercise price of $0.32 per share, and options to purchase 1,736,920 shares of our common stock had been exercised. Effective as of immediately prior to the closing of this offering, we will no longer grant stock options or other awards under the 2008 plan.

2015 Stock Incentive Plan

We expect our board of directors to adopt and our stockholders to approve the 2015 plan, to become effective in connection with this offering. The 2015 plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, awards of restricted stock, restricted stock units, other stock-based awards. Upon effectiveness of the 2015 plan, the number of shares of our common stock that will be reserved for issuance under the 2015 plan will be the sum of (1) shares of common stock and (2) an annual increase, to be added the first day of each fiscal year, beginning with the fiscal year ending December 31, 2016 and continuing until, and including, the fiscal year ending December 31, 2025, equal to the lowest of shares of our common stock, %

of the number of shares of our common stock outstanding on the first day of the fiscal year and an amount determined by our board of directors. Our employees, officers, directors, consultants and advisors will be eligible to receive awards under the 2015 plan; however, incentive stock options may only be granted to our employees.

Pursuant to the terms of the 2015 plan, our board of directors (or a committee delegated by our board of directors) administers the 2015 plan and, subject to any limitations set forth in the 2015 plan, will select the recipients of awards and determine:

- the number of shares of common stock covered by options and the dates upon which those options become exercisable;
- the type of options to be granted;
- the exercise price of options, which price must be at least equal to the fair market value of our common stock on the date of grant;
- the duration of options, which may not be in excess of ten years;
- the methods of payment of the exercise price of options; and
- the number of shares of our common stock subject to and the terms of any stock appreciation rights, awards of restricted stock, restricted stock units, other stock-based awards and the terms and conditions of such awards, including the issue price, conditions for repurchase, repurchase price and performance conditions (though the measurement price of stock appreciation rights must be at least equal to the fair market value of our common stock on the date of grant and the duration of such awards may not be in excess of ten years), if any.

If our board of directors delegates authority to an executive officer to grant awards under the 2015 plan, the executive officer will have the power to make awards to all of our employees, except executive officers. Our board of directors will fix the terms of the awards to be granted by such executive officer, including the exercise price of such awards (or a formula for establishing such price), and the maximum number of shares subject to awards that such executive officer may make.

In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of our common stock other than an ordinary cash dividend, we are required by the 2015 plan to make equitable adjustments (or make substitute awards, if applicable), in a manner determined by our board, to:

- the number and class of securities available under the 2015 plan;
- the share counting rules under the 2015 plan;
- the number and class of securities and exercise price per share of each outstanding option;
- the share and per-share provisions and measurement price of each outstanding stock appreciation right;
- the number of shares and the repurchase price per share subject to each outstanding restricted stock award or restricted stock unit award; and
- the share and per-share related provisions and purchase price, if any, of any outstanding other stock-based award.

Upon a merger or other reorganization event (as defined in our 2015 plan), our board of directors, may, on such terms as our board determines (except to the extent specifically provided otherwise in an applicable award agreement or other agreement between the participant and us), take any one or more

of the following actions pursuant to the 2015 plan, as to some or all outstanding awards, other than restricted stock awards:

- provide that all outstanding awards will be assumed or substantially equivalent awards will be substituted by the successor corporation (or an affiliate thereof);
- upon written notice to a participant, provide that the participant's unvested and/or unexercised options or other awards will terminate immediately prior to the consummation of such transaction unless exercised by the participant;
- provide that outstanding awards will become exercisable, realizable or deliverable, or restrictions applicable to an award will lapse, in whole or in part, prior to or upon the reorganization event;
- in the event of a reorganization event pursuant to which holders of our common stock will receive a cash payment for each share surrendered in the reorganization event, make or provide for a cash payment to the participants with respect to each award held by a participant equal to (1) the number of shares of our common stock subject to the vested portion of the award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such reorganization event) multiplied by (2) the excess, if any, of the cash payment for each share surrendered in the reorganization event over the exercise, measurement or purchase price of such award and any applicable tax withholdings, in exchange for the termination of such award;
- provide that, in connection with a liquidation or dissolution, awards convert into the right to receive liquidation proceeds (if applicable, net of exercise, measurement or purchase price thereof and any applicable tax withholdings); or
- any combination of the foregoing.

Our board of directors is not obligated by the 2015 plan to treat all awards, all awards held by a participant, or all awards of the same type, identically.

In the case of certain restricted stock units, no assumption or substitution is permitted, and the restricted stock units will instead be settled in accordance with the terms of the applicable restricted stock unit agreement.

Upon the occurrence of a reorganization event other than a liquidation or dissolution, the repurchase and other rights under each outstanding restricted stock award will continue for the benefit of the successor company and will, unless our board of directors may otherwise determine, apply to the cash, securities or other property which our common stock is converted into or exchanged for pursuant to the reorganization event, unless our board provided for the termination or deemed satisfaction of such repurchase or other rights under the restricted stock award agreement or any other agreement between the participant and us. Upon the occurrence of a reorganization event involving a liquidation or dissolution, all restrictions and conditions on each outstanding restricted stock award will automatically be deemed terminated or satisfied, unless otherwise provided in the agreement evidencing the restricted stock award or in any other agreement between the participant and us.

Our board of directors may at any time provide that any award under the 2015 plan shall become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

No award may be granted under the 2015 plan after , 2025. Our board of directors may amend, suspend or terminate the 2015 plan at any time, except that stockholder approval will be required to comply with applicable law or stock market requirements.

401(k) Retirement Plan

We maintain a 401(k) retirement plan that is intended to be a tax-qualified defined contribution plan under Section 401(k) of the Code. In general, all of our employees are eligible to participate, beginning on the first day of the month following commencement of their employment. The 401(k) plan includes a salary deferral arrangement pursuant to which participants may elect to reduce their current compensation by up to the statutorily prescribed limit, equal to $18,000 in 2015, and have the amount of the reduction contributed to the 401(k) plan.

Limitations on Liability and Indemnification

Our certificate of incorporation, which will become effective upon the closing of this offering, limits the personal liability of directors for breach of fiduciary duty to the maximum extent permitted by the General Corporation Law of the State of Delaware and provides that no director will have personal liability to us or to our stockholders for monetary damages for breach of fiduciary duty or other duty as a director. However, these provisions do not eliminate or limit the liability of any of our directors:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- for voting for or assenting to unlawful payments of dividends, stock repurchases or other distributions; or
- for any transaction from which the director derived an improper personal benefit.

Any amendment to or repeal of these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to such amendment or repeal. If the General Corporation Law of the State of Delaware is amended to provide for further limitations on the personal liability of directors of corporations, then the personal liability of our directors will be further limited to the greatest extent permitted by the General Corporation Law of the State of Delaware.

In addition, our certificate of incorporation, which will become effective upon the closing of this offering, provides that we must indemnify our directors and officers and we must advance expenses, including attorneys' fees, to our directors and officers in connection with legal proceedings, subject to very limited exceptions.

We maintain a general liability insurance policy that covers specified liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers. In addition, we have entered into indemnification agreements with certain of our directors, and we intend to enter into indemnification agreements with all of our directors and executive officers prior to the completion of this offering. These indemnification agreements may require us, among other things, to indemnify each such director or officer for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by him in any action or proceeding arising out of his or her service as one of our directors or officers.

Some of our non-employee directors may, through their relationships with their employers, be insured or indemnified against specified liabilities incurred in their capacities as members of our board of directors.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, or the Securities Act, may be permitted to directors, executive officers or persons controlling us, in the opinion of the

SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from the director or officer. The director or officer may amend or terminate the plan in some circumstances. Our directors and executive officers may also buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

Director Compensation

We currently do not have a formal non-employee director compensation policy. During 2014, we paid Mr. Bate an annual retainer of $30,000 for service on our board of directors. In addition, on March 19, 2014, we granted Mr. Bate an option to purchase 127,000 shares of our common stock, at an exercise price of $0.53 per share, which vests over four years, with 25% of the shares having vested on January 1, 2015 and the remainder vesting in equal monthly installments thereafter. This stock option had a grant date fair value of $58,848, computed in accordance with ASC Topic 718, which combined with Mr. Bate's annual retainer resulted in total compensation of $88,848 for Mr. Bate for 2014. See Note 12 to our financial statements appearing at the end of this prospectus regarding assumptions underlying the valuation of equity awards. None of our other non-employee directors has received any compensation from us, although we reimburse our non-employee directors for reasonable travel and out-of-pocket expenses incurred in connection with attending board of director and committee meetings. With the exception of the stock option granted to Mr. Bate described above, there were no outstanding equity awards held by our non-employee directors as of December 31, 2014.

We do not pay any compensation to our President and Chief Executive Officer in connection with her service on our board of directors. The compensation that we pay to our President and Chief Executive Officer is discussed earlier in this "Executive Compensation" section.

TRANSACTIONS WITH RELATED PERSONS

Since January 1, 2012, we have engaged in the following transactions in which the amount involved exceeded $120,000 and any of our directors or executive officers or beneficial holders of more than 5% of any class of our voting securities, or any immediate family member of the foregoing persons, had a material interest. We believe that all of these transactions were on terms comparable to terms that could have been obtained from unrelated third parties.

Series A Preferred Stock Financing

In closings that occurred in July 2012, January 2013 and June 2013, we issued and sold an aggregate of 25,636,951 shares of our series A preferred stock at a price per share of $0.70, for an aggregate purchase price of $17.9 million. The following table sets forth the number of shares of our series A preferred stock purchased by our directors, executive officers and 5% stockholders and their respective affiliates and the aggregate purchase price for such shares.

Name	Shares of Series A Preferred Stock Purchased	Aggregate Purchase Price
SV Life Sciences Fund V, L.P.	8,160,866	$ 5,712,606
SV Life Sciences Fund V Strategic Partners, L.P.	172,467	120,727
Clarus Lifesciences II, L.P.	8,000,000	5,600,000
MedImmune Ventures, Inc.	5,333,333	3,733,333
Advanced Technology Ventures VIII, L.P.	3,333,333	2,333,333
George Milne(1)	302,115	211,481
Jill C. Milne	35,714	25,000
Michael Jirousek	35,714	25,000
Total	25,373,542	$ 17,761,480

(1) George Milne is the father-in-law of Jill C. Milne, our President and Chief Executive Officer.

Series B Preferred Stock Financing

In October 2013, we issued and sold an aggregate of 34,129,571 shares of our series B preferred stock at a price per share of $0.9503, for an aggregate purchase price of $32.4 million. The following table sets forth the number of shares of our series B preferred stock purchased by our directors, executive officers and 5% stockholders and their affiliates and the aggregate purchase price for such shares.

Name	Shares of Series B Preferred Stock Purchased	Aggregate Purchase Price
SV Life Sciences Fund V, L.P.	7,961,792	$ 7,566,091
SV Life Sciences Fund V Strategic Partners, L.P.	168,259	159,897
Clarus Lifesciences II, L.P.	7,899,973	7,507,344
MedImmune Ventures, Inc.	3,156,898	3,000,000
Advanced Technology Ventures VIII, L.P.	3,156,897	2,999,999
Lightstone Ventures, L.P.	6,539,602	6,214,584
Lightstone Ventures (A), L.P.	1,352,643	1,285,417
Total	30,236,064	$ 28,733,332

Investor Rights Agreement

We are a party to an amended and restated investor rights agreement, dated as of October 31, 2013, with holders of our preferred stock, including some of our directors and 5% stockholders and their affiliates and entities affiliated with our officers and directors. The amended and restated investor rights agreement provides these holders the right, following the completion of this offering, to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing. In addition, the holders of warrants to purchase shares of our preferred stock have rights under those warrants to become party to the amended and restated investor rights agreement following exercise of the warrants, following which they will have, with respect to the shares acquired on exercise of the warrants, the same rights to require us to register the shares as the other investor parties to the amended and restated investor rights agreement. See "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights.

Employment Agreements

See the "Executive Compensation—Agreements with Our Named Executive Officers" section of this prospectus for a further discussion of these arrangements.

Indemnification Agreements

Our certificate of incorporation that will become effective upon the closing of this offering provides that we will indemnify our directors and officers to the fullest extent permitted by Delaware law. In addition, we have entered into indemnification agreements with each of our directors. See "Executive Compensation—Limitation of Liability and Indemnification" for additional information regarding these agreements.

Policies and Procedures for Related Person Transactions

Our board of directors has adopted written policies and procedures, which will become effective at the time of this offering, for the review of any transaction, arrangement or relationship in which our company is a participant, the amount involved exceeds $120,000 and one of our executive officers, directors, director nominees or 5% stockholders, or their immediate family members, each of whom we refer to as a "related person," has a direct or indirect material interest.

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a "related person transaction," the related person must report the proposed related person transaction to our Chief Financial Officer. The policy calls for the proposed related person transaction to be reviewed and approved by our audit committee. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, the committee will review, and, in its discretion, may ratify the related person transaction. The policy also permits the chairman of the audit committee to review and, if deemed appropriate, approve proposed related person transactions that arise between committee meetings, subject to ratification by the committee at its next meeting. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by the audit committee after full disclosure of the related person's interest in the transaction. As appropriate for the circumstances, the committee will review and consider:

- the related person's interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;

- the approximate dollar value of the amount of the related person's interest in the transaction without regard to the amount of any profit or loss;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unrelated third party;
- the purpose of, and the potential benefits to us of, the transaction; and
- any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

The audit committee may approve or ratify the transaction only if the committee determines that, under all of the circumstances, the transaction is in our best interests. The committee may impose any conditions on the related person transaction that it deems appropriate.

The policy provides that transactions involving compensation of executive officers shall be reviewed and approved by the compensation committee in the manner specified in its charter.

PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock as of December 31, 2014 by:

- each of our directors;
- each of our named executive officers;
- all of our directors and executive officers as a group; and
- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock.

The column entitled "Percentage of Shares Beneficially Owned—Before Offering" is based on a total of 109,305,194 shares of our common stock outstanding as of December 31, 2014, assuming the automatic conversion of all outstanding shares of our preferred stock into an aggregate of 102,967,274 shares of our common stock upon the closing of this offering. The column entitled "Percentage of Shares Beneficially Owned—After Offering" is based on shares of our common stock to be outstanding after this offering, including the shares of our common stock that we are selling in this offering, but not including any additional shares issuable upon exercise of outstanding options or warrants.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC and includes voting or investment power with respect to our common stock. Shares of our common stock subject to options that are currently exercisable or exercisable within 60 days after December 31, 2014 are considered outstanding and beneficially owned by the person holding the options for the purpose of calculating the percentage ownership of that person but not for the purpose of calculating the percentage ownership of any other person. Except as otherwise noted, the persons and entities in this table have sole voting and investing power with respect to all of the shares of our common stock beneficially owned by them, subject to community property laws, where applicable. Except as otherwise

set forth below, the address of the beneficial owner is c/o Catabasis Pharmaceuticals, Inc., One Kendall Square, Bldg. 1400E, Suite B14202, Cambridge, MA 02139.

Name of Beneficial Owner	Shares Beneficially Owned	Percentage of Shares Beneficially Owned	
		Before Offering	After Offering
5% Stockholders			
Entities affiliated with SV Life Sciences(1)	29,796,718	27.3%	%
Clarus Lifesciences II, L.P.(2)	28,699,973	26.3	
MedImmune Ventures, Inc.(3)	17,023,564	15.6	
Advanced Technology Ventures VIII, L.P.(4)	11,823,564	10.8	
Entities affiliated with Lightstone Ventures(5)	7,892,245	7.2	
Named Executive Officers and Directors			
Jill C. Milne, Ph.D.(6)	5,264,979	4.7	
Ian C. Sanderson(7)	453,199	*	
Michael Jirousek, Ph.D.(8)	5,162,919	4.6	
Michael Ross, Ph.D.(9)	29,796,718	27.3	
Nicholas Galakatos, Ph.D.(10)	28,699,973	26.3	
Jean George(11)	19,715,809	18.0	
Ron Laufer, M.D.(12)	17,023,564	15.6	
Kenneth Bate(13)	37,042	*	
All Executive Officers and Directors as a Group (9 persons)(14)	106,991,733	93.2	

* Represents beneficial ownership of less than 1% of our outstanding stock.

(1) Consists of 29,180,045 shares of record held by SV Life Sciences Fund V, L.P. ("SVLS V LP") and 616,673 shares of record held by SV Life Sciences Fund V Strategic Partners, L.P. ("SVLS V SPP"). SV Life Sciences Fund V (GP), LP ("SVLS V GP") is the general partner of SVLS V LP and SVLS V SPP. The general partner of SVLS V GP is SVLSF V, LLC. The members of the investment committee of SVLSF V, LLC are Kate Bingham, James Garvey, Eugene D. Hill, III, David Milne and Michael Ross, a member of our board of directors. SVLS V GP, SVLSF V, LLC and each of the individuals comprising the SVLSF V, LLC investment committee may be deemed to share voting, dispositive and investment power over the shares held of record by SVLS V LP and SVLS V SPP. Each of SVLS V GP, SVLSF V, LLC and the individual members of the SVLSF V, LLC investment committee disclaim beneficial ownership of the shares owned directly by SVLS V LP and SVLS V SPP except to the extent of any pecuniary interest therein. The address for the entities is One Boston Place, Suite 3900, 201 Washington Street, Boston, Massachusetts 02108.

(2) Consists of 28,699,973 shares held of record by Clarus Lifesciences II, L.P. ("Clarus"). Clarus Ventures II GP, L.P. (the "GPLP"), as the sole general partner of Clarus, may be deemed to beneficially own certain of the shares held of record by Clarus. The GPLP disclaims beneficial ownership of all shares held of record by Clarus in which the GPLP does not have an actual pecuniary interest. Clarus Ventures II, LLC (the "GPLLC"), as the sole general partner of the GPLP, may be deemed to beneficially own certain of the shares held of record by Clarus. The GPLLC disclaims beneficial ownership of all shares held of record by Clarus in which it does not have an actual pecuniary interest. Each of Nicholas Galakatos, a member of our board of directors, and Denis Henner, Robert Liptak, Nicholas Simon, Michael Steinmetz and Kurt Wheeler, as individual Managing Directors of the GPLLC, may be deemed to beneficially own certain of the shares held of record by Clarus. Each of Messrs. Galakatos, Henner, Liptak, Simon, Steinmetz and Wheeler disclaims beneficial ownership of all shares held of record by Clarus in

which he does not have an actual pecuniary interest. The address for the entities is 101 Main Street, Suite 1210, Cambridge, MA 02142.

(3) Ron Laufer, a member of our board of directors, is the Senior Managing Partner of MedImmune Ventures, Inc., and as a result, Dr. Laufer may be deemed to hold voting, dispositive and investment power over the shares held by MedImmune Ventures, Inc. Dr. Laufer disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. The address of MedImmune Ventures, Inc. is 1 MedImmune Way, Gaithersburg, Maryland 20878.

(4) ATV Associates VIII, LLC ("ATV A VIII") is the General Partner of Advanced Technology Ventures VIII, L.P. ("ATV VIII") and exercises voting and dispositive authority over the shares held by ATV VIII. Voting and dispositive decisions of ATV A VIII are made collectively by Michael A. Carusi, Jean George, a member of our board of directors, Steven N. Baloff, Robert C. Hower and William C. Wiberg (collectively, the "ATV VIII Managing Directors"). ATV A VIII and the ATV VIII Managing Directors disclaim beneficial ownership of the shares held by ATV VIII except to the extent of their pecuniary interest therein. The address for the entities is Bay Colony Corporate Center, 1000 Winter Street, Suite 3700, Waltham, Massachusetts 02451.

(5) Consists of 6,945,845 shares of common stock held by Lightstone Ventures, L.P. and 946,400 shares of common stock held by Lightstone Ventures (A), L.P. LSV Associates, LLC ("LSV GP") is the General Partner of Lightstone Ventures, L.P. and Lightstone Ventures (A), L.P. (collectively, "LSV") and exercises voting and dispositive authority over the shares held by LSV. Voting and dispositve decisions of LSV GP are made collectively by Michael A. Carusi, Jean George, a member of our board of directors, Ralph E. Christoffersen and Henry A. Plain, Jr. (collectively, the "LSV Managing Directors"). LSV GP and the LSV Managing Directors disclaim beneficial ownership of the shares held by LSV except to the extent of their pecuniary interest therein. The address for the entities is 500 Boylston Street, Suite 1380, Boston, Massachusetts 02116.

(6) Includes (i) 1,995,432 shares of common stock issuable upon the exercise of options and (ii) 112,499 shares of common stock issuable upon the exercise of warrants, in each case exercisable within 60 days after December 31, 2014.

(7) Consists of 453,199 shares of common stock issuable upon the exercise of options exercisable within 60 days after December 31, 2014.

(8) Includes (i) 1,893,349 shares of common stock issuable upon the exercise of options and (ii) 112,499 shares of common stock issuable upon the exercise of warrants, in each case exercisable within 60 days after December 31, 2014.

(9) Consists of the shares described in note (1) above. Dr. Ross is a member of the investment committee of SVLSF V, LLC, which is the general partner of SV Life Sciences Fund V (GP), which is the general partner of SV Life Sciences Fund V, L.P. and SV Life Sciences Fund V Strategic Partners, L.P., and, as a result, Dr. Ross may be deemed to share voting, dispositive and investment power over the shares held of record by SV Life Sciences Fund V, L.P. and SV Life Sciences Fund V Strategic Partners L.P. Dr. Ross disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Dr. Ross' address is One Boston Place, Suite 3900, Boston, Massachusetts 02108.

(10) Consists of the shares described in note (2) above. Dr. Galakatos is a Managing Director of Clarus Ventures II, LLC, which the sole general partner of Clarus Ventures II GP, L.P., which is the sole general partner of Clarus Ventures II, L.P., and, as a result, Dr. Galakatos shares investment and voting control over the shares held by Clarus Lifesciences II, L.P. Dr. Galakatos disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Dr. Galakatos' address is 101 Main Street, Suite 1210, Cambridge, MA 02142.

(11) Consists of the shares described in notes (4) and (5) above. Ms. George is an ATV III Managing Director and, as a result, shares voting and dispositive power over the shares held by Advanced Technology Ventures VIII, L.P. Ms. George is also an LSV Managing Director and, as a result, shares voting and dispositive power over the shares held by LSV. Ms. George disclaims beneficial ownership of the shares held by ATV VIII and LSV except to the extent of any pecuniary interest therein. Ms. George's address is Bay Colony Corporate Center, 1000 Winter Street, Suite 3700, Waltham, Massachusetts 02451.

(12) Consists of the shares described in note (3) above. Dr. Laufer is the Senior Managing Partner of MedImmune Ventures, Inc., and as a result, Dr. Laufer may be deemed to hold voting, dispositive and investment power over the shares held by MedImmune Ventures, Inc. Dr. Laufer disclaims beneficial ownership of such shares except to the extent of any pecuniary interest therein. Dr. Laufer's address is c/o MedImmune Ventures, 1 MedImmune Way, Gaithersburg, Maryland 20878.

(13) Consists of 37,042 shares of common stock issuable upon the exercise of options exercisable within 60 days after December 31, 2014.

(14) Includes (i) 5,216,552 shares of common stock issuable upon the exercise of options and (ii) 224,998 shares of common stock issuable upon the exercise of warrants, in each case exercisable within 60 days after December 31, 2014.

DESCRIPTION OF CAPITAL STOCK

General

Following the closing of this offering, our authorized capital stock will consist of shares of common stock, par value $0.001 per share, and shares of preferred stock, par value $0.001 per share, all of which preferred stock will be undesignated. The following description of our capital stock and provisions of our restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the certificate of incorporation and the bylaws that will be in effect upon the closing of this offering. We have filed copies of these documents as exhibits to our registration statement of which this prospectus forms a part. The descriptions of the common stock and preferred stock reflect changes to our capital structure that will occur upon the closing of this offering.

Common Stock

As of December 31, 2014, we had outstanding 109,305,194 shares of common stock, assuming the automatic conversion of all outstanding shares of our preferred stock into common stock upon the closing of this offering, which were held of record by 39 stockholders.

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders will be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Other matters shall be decided by the affirmative vote of our stockholders having a majority in voting power of the votes cast by the stockholders present or represented and voting on such matter, except as otherwise disclosed below. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding preferred stock.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Under the terms of our certificate of incorporation that will become effective upon the closing of this offering, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. Upon the closing of this offering, there will be no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Stock Options

As of December 31, 2014, options to purchase 15,756,837 shares of our common stock at a weighted-average exercise price of $0.32 per share were outstanding, of which options to purchase 6,852,418 shares of our common stock were exercisable, at a weighted-average exercise price of $0.17 per share.

Warrants

As of December 31, 2014, we had outstanding warrants to purchase shares of our Series B preferred stock that upon the closing of this offering will be exercisable for an aggregate of 157,844 shares of our common stock at an exercise price of $0.9503 per share.

As of December 31, 2014, we had outstanding warrants to purchase shares of our common stock that upon the closing of this offering will be exercisable for an aggregate of 447,850 shares of our common stock at an exercise price of $0.13 per share.

Registration Rights

Our amended and restated investor rights agreement, or the Investor Rights Agreement, provides certain holders of our preferred stock, including some of our directors and 5% stockholders and their respective affiliates and entities affiliated with our officers and directors, the right, following the completion of this offering, to require us to register these shares under the Securities Act of 1933, as amended, or the Securities Act, under specified circumstances as described below. In addition, the holders of warrants to purchase shares of our preferred stock have rights under those warrants to become party to the Investor Rights Agreement following exercise of the warrants, following which they will have, with respect to the shares acquired on exercise of the warrants, the same rights to require us to register the shares as the other investor parties to the Investor Rights Agreement. After registration pursuant to these rights, these shares will become freely tradable without restriction under the Securities Act.

Demand Registration Rights

Beginning six months after the closing of this offering, subject to specified limitations set forth in the Investor Rights Agreement, at any time the holders of a majority of then outstanding registrable securities, as defined in the Investor Rights Agreement, acting together, may demand in writing that we register their registrable securities under the Securities Act so long as the total amount of registrable shares requested to be registered has an anticipated aggregate offering price to the public, net of selling expenses, of least $10.0 million. We are not obligated to file a registration statement pursuant to this demand provision on more than two occasions, subject to specified exceptions.

In addition, at any time after we become eligible to file a registration statement on Form S-3 under the Securities Act, subject to specified limitations, the holders of at least 35% of the registrable securities then outstanding may demand in writing that we register on Form S-3 registrable shares held by them so long as the total amount of registrable shares requested to be registered has an anticipated aggregate offering price to the public, net of selling expenses, of least $1.0 million.

Incidental Registration Rights

If, at any time after the closing of this offering, we propose to file a registration statement to register any of our securities under the Securities Act, either for our own account or for the account of any of our stockholders that are not holders of registrable shares, solely for cash and on a form that would also permit the registration of registrable shares, the holders of our registrable shares are

entitled to notice of registration and, subject to specified exceptions, we will be required to register the registrable shares then held by them that they request that we register.

Expenses

Pursuant to the Investor Rights Agreement, we are required to pay all registration expenses, including registration fees, printing expenses, fees and disbursements of our counsel and accountants and reasonable fees and disbursements of one counsel representing the selling stockholders, other than any underwriting discounts and commissions, related to any demand or incidental registration. The Investor Rights Agreement contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify the selling stockholders in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions in the registration statement attributable to them.

Anti-Takeover Effects of Delaware Law and Our Charter and Bylaws

Delaware law contains, and upon the completion of this offering our certificate of incorporation and our bylaws will contain, provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Staggered Board; Removal of Directors

Upon the completion of this offering, our certificate of incorporation and bylaws will divide our board of directors into three classes with staggered three-year terms. In addition, a director will only be able to be removed for cause and only by the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in an annual election of directors. Any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, will only be able to be filled by vote of a majority of our directors then in office. The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Stockholder Action by Written Consent; Special Meetings

Upon the completion of this offering, our certificate of incorporation will provide that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of such holders and may not be effected by any consent in writing by such holders. Upon the completion of this offering, our certificate of incorporation and bylaws will also provide that, except as otherwise required by law, special meetings of our stockholders can only be called by our chairman of the board, our Chief Executive Officer or our board of directors.

Advance Notice Requirements for Stockholder Proposals

Upon the completion of this offering, our bylaws will establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of persons for election to our board of directors. Stockholders at an annual meeting will only be able to consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors or by a stockholder of record on the record date for the meeting who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder's intention to bring such business before the

meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities.

Delaware Business Combination Statute

Upon the completion of this offering, we will be subject to Section 203 of the General Corporation Law of the State of Delaware. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger or consolidation involving us and the "interested stockholder" and the sale of more than 10% of our assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Amendment of Certificate of Incorporation and Bylaws

The General Corporation Law of the State of Delaware provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Effective upon the completion of this offering, our bylaws may be amended or repealed by a majority vote of our board of directors or by the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in any annual election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in any annual election of directors is required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of our certificate of incorporation described above under "—Staggered Board; Removal of Directors" and "—Stockholder Action by Written Consent; Special Meetings."

Exclusive Forum Selection

Effective upon completion of this offering, our certificate of incorporation will provide that the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of our company, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to our company or our stockholders, (3) any action asserting a claim against our company arising pursuant to any provision of the General Corporation Law of the State of Delaware or our certificate of incorporation or bylaws, (4) any action to interpret, apply, enforce, or determine the validity of our certificate of incorporation or bylaws or (5) any action asserting a claim against our company governed by the internal affairs doctrine. Although our certificate of incorporation contains the choice of forum provision described above, it is possible that a court could rule that such a provision is inapplicable for a particular claim or action or that such provision is unenforceable.

Listing on the Nasdaq Global Market

We intend to have our common stock listed on The NASDAQ Global Market under the symbol "CATB."

Authorized but Unissued Shares

The authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval, subject to any limitations imposed by the listing requirements of

The NASDAQ Global Market. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make it more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock will be .

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock, and a liquid trading market for our common stock may not develop or be sustained after this offering. Future sales of substantial amounts of our common stock in the public market, including shares issued upon exercise of outstanding options, or the anticipation of these sales, could adversely affect market prices prevailing from time to time and could impair our ability to raise capital through sales of equity securities.

Based upon the 6,337,920 shares of our common stock that were outstanding on December 31, 2014, upon the closing of this offering, we will have outstanding shares of our common stock, after giving effect to the issuance of shares of our common stock in this offering and the conversion of all outstanding shares of our preferred stock into 102,967,274 shares of common stock upon the closing of this offering, and assuming no exercise by the underwriters of their over-allotment option and no exercise of options or warrants outstanding as of December 31, 2014.

Of the shares to be outstanding immediately after the closing of this offering, we expect that the shares to be sold in this offering will be freely tradable without restriction under the Securities Act unless purchased by our "affiliates," as that term is defined in Rule 144 under the Securities Act. The remaining shares of our common stock outstanding after this offering will be "restricted securities" under Rule 144, and we expect that substantially all of these restricted securities will be subject to the 180-day lock-up period under the lock-up agreements as described below. These restricted securities may be sold in the public market only if registered or pursuant to an exemption from registration, such as Rule 144 or Rule 701 under the Securities Act.

Rule 144

In general, under Rule 144, beginning 90 days after the date of this prospectus, any person who is not our affiliate and has held their shares for at least six months, including the holding period of any prior owner other than one of our affiliates, may sell shares without restriction, subject to the availability of current public information about us. In addition, under Rule 144, any person who is not our affiliate and has not been our affiliate at any time during the preceding three months and has held their shares for at least one year, including the holding period of any prior owner other than one of our affiliates, would be entitled to sell an unlimited number of shares immediately upon the closing of this offering without regard to whether current public information about us is available.

Beginning 90 days after the date of this prospectus, a person who is our affiliate or who was our affiliate at any time during the preceding three months may sell any unrestricted securities, as well as restricted securities that the person has beneficially owned for at least six months, including the holding period of any prior owner other than one of our affiliates, under Rule 144. Affiliates selling restricted or unrestricted securities may sell a number of shares within any three-month period that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately shares immediately after this offering; and
- the average weekly trading volume of our common stock on The NASDAQ Global Market during the four calendar weeks preceding the filing of a Notice of Proposed Sale of Securities Pursuant to Rule 144 with respect to the sale.

Sales under Rule 144 by our affiliates are also subject to manner of sale provisions and notice requirements and to the availability of current public information about us.

Upon expiration of the 180-day lock-up period described below, approximately shares of our common stock will be eligible for sale under Rule 144, including shares eligible for resale

immediately upon the closing of this offering as described above. We cannot estimate the number of shares of our common stock that our existing stockholders will elect to sell under Rule 144.

Rule 701

In general, under Rule 701 of the Securities Act, any of our employees, consultants or advisors, other than our affiliates, who purchased shares from us in connection with a qualified compensatory stock plan or other written agreement is eligible to resell these shares 90 days after the date of this prospectus in reliance on Rule 144, but without compliance with the holding period requirements of Rule 144 and without regard to the volume of such sales or the availability of public information about us. Subject to the 180-day lock-up period described below, approximately shares of our common stock will be eligible for sale in accordance with Rule 701.

Lock-Up Agreements

We, and each of our executive officers and directors and the holders of substantially all of our outstanding stock have agreed that, without the prior written consent of Citigroup Global Markets Inc. and Cowen and Company, LLC, on behalf of the underwriters, we and they will not, subject to limited exceptions, during the period ending 180 days after the date of this prospectus:

- offer, sell, contract to sell, pledge or otherwise dispose of, or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition of (whether by actual disposition or effective economic disposition due to cash settlement or otherwise), directly or indirectly, including the filing (or participation in the filing) of a registration statement (other than a registration statement on Form S-8) with the SEC with respect to, any shares of our capital stock or any securities convertible into, or exercisable or exchangeable for, such capital stock;

- establish or increase a put equivalent position or liquidate or decrease a call equivalent position with respect to any shares of our capital stock or any securities convertible into or exercisable or exchangeable for such capital stock, or publicly announce an intention to effect any such transaction; or

- publicly announce an intention to effect any of the foregoing.

Registration Rights

Subject to the lock-up agreements described above, upon the closing of this offering, the holders of an aggregate of 102,967,274 shares of our common stock, along with the holders of warrants to purchase an aggregate of 157,844 shares of common stock, will be entitled to various rights with respect to the registration of these shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See "Description of Capital Stock—Registration Rights" for additional information. Shares covered by a registration statement will be eligible for sale in the public market upon the expiration or release from the terms of lock-up agreements applicable to such shares.

Stock Options and Warrants

As of December 31, 2014, we had outstanding options to purchase 15,756,837 shares of our common stock, of which options to purchase 6,852,418 shares were vested. Following this offering, we intend to file one or more registration statements on Form S-8 under the Securities Act to register all of the shares of our common stock subject to outstanding options and options and other awards issuable pursuant to the 2015 stock incentive plan and our 2008 equity incentive plan. Shares covered

by these registration statements will then be eligible for sale in the public markets, subject to vesting restrictions, any applicable lock-up agreements described above and Rule 144 limitations applicable to affiliates.

As of December 31, 2014, we had outstanding warrants to purchase shares of our Series B preferred stock that upon the closing of this offering will be exercisable for an aggregate of 157,844 shares of our common stock. As of December 31, 2014, we also had outstanding and exercisable warrants to purchase 447,850 shares of common stock. Any shares acquired through the exercise of these warrants will be eligible for sale subject to the lock-up agreements and securities laws described above.

MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF COMMON STOCK

The following is a general discussion of material U.S. federal income and estate tax considerations relating to ownership and disposition of shares of our common stock by a non-U.S. holder. For purposes of this discussion, the term "non-U.S. holder" means a beneficial owner of our common stock that is not for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in the United States or under the laws of the United States or of any political subdivision of the United States;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if (1) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have authority to control all substantial decisions of the trust or (2) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This discussion does not address the tax treatment of partnerships or other entities that are pass-through entities for U.S. federal income tax purposes or persons who hold their common stock through partnerships or other pass-through entities. A partner in a partnership or other pass-through entity that will hold our common stock should consult his, her or its own tax advisor regarding the tax consequences of acquiring, holding and disposing of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any change could alter the tax consequences to non-U.S. holders described in this prospectus. There can be no assurance that the Internal Revenue Service, or the IRS, will not challenge one or more of the tax consequences described herein.

We assume in this discussion that a non-U.S. holder holds shares of our common stock as a capital asset (generally, property held for investment). This discussion does not address all aspects of U.S. federal income and estate taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances nor does it address any aspects of U.S. state, local or non-U.S. taxes, the alternative minimum tax, or the Medicare tax on net investment income. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- financial institutions;
- brokers or dealers in securities;
- tax-exempt organizations;
- pension plans;
- owners that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment;
- insurance companies;

- regulated investment companies;
- controlled foreign corporations;
- passive foreign investment companies;
- persons that have a functional currency other than the U.S. dollar; and
- certain U.S. expatriates.

This discussion is for general information only and is not tax advice. Accordingly, all prospective non-U.S. holders should consult their own tax advisors regarding the U.S. federal, state, local and non-U.S. income tax and estate tax consequences of acquiring, holding and disposing of our common stock.

Distributions on Our Common Stock

If we pay distributions on our common stock, those distributions generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such holder's tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below under the heading "Gain on Disposition of Common Stock." Any such distribution would also be subject to the discussion below under the section titled "Withholding and Information Reporting Requirements—FATCA."

As discussed under "Dividend Policy," we do not expect to pay cash dividends to holders of our common stock in the foreseeable future. In the event we do pay dividends, dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States, and if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or successor form) and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their own tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing a U.S. tax return with the IRS.

Gain on Disposition of Common Stock

A non-U.S. holder generally will not be subject to any U.S. federal income tax on any gain realized upon such non-U.S. holder's sale, exchange or other disposition of shares of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a U.S. trade or business, and, if an applicable income tax treaty so provides, the gain is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States; in these cases, the non-U.S. holder generally will be taxed on a net income basis at the graduated U.S. federal income tax rates applicable to U.S. persons and, if the non-U.S. holder is a corporation, the branch profits tax described above in "Distributions on Our Common Stock," may also apply;

- the non-U.S. holder is a nonresident alien who is present in the United States for 183 days or more in the taxable year of the disposition and certain other requirements are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence) on the net gain derived from the disposition, which may be offset by U.S.-source capital losses of the non-U.S. holder, if any; or

- we are, or have been at any time during the five-year period preceding such disposition (or the non-U.S. holder's holding period, if shorter), a "U.S. real property holding corporation," unless our common stock is regularly traded on an established securities market and the non-U.S. holder held no more than 5% of our outstanding common stock, directly or indirectly, during the shorter of the five-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a "U.S. real property holding corporation" if the fair market value of its "U.S. real property interests" (as defined in the Code and applicable regulations) equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business.

Although there can be no assurance, we believe that we are not currently, and we do not anticipate becoming, a "U.S. real property holding corporation" for U.S. federal income tax purposes. Further, no assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rule described above. If we are determined to be a "U.S. real property holding corporation" and the exception described above does not apply, then a purchaser may withhold 10% of the proceeds payable to a non-U.S. holder from a sale of our common stock and the non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to U.S. persons.

Federal Estate Tax

Shares of our common stock that are owned or treated as owned by an individual who is not a citizen or resident of the United States (as specially defined for U.S. federal estate tax purposes) at the time of death are considered U.S. situs assets and will be included in the individual's gross estate for U.S. federal estate tax purposes. Such shares, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty provides otherwise.

Information Reporting and Backup Withholding

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders may have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup

withholding at the applicable rate with respect to dividends on our common stock. Generally, a holder will comply with such procedures if it provides a properly executed IRS Form W-8BEN or W-8BEN-E (or other applicable Form W-8) or otherwise meets documentary evidence requirements for establishing that it is a non-U.S. holder, or otherwise establishes an exemption. Dividends paid to non-U.S. holders subject to withholding of U.S. federal income tax, as described above under the heading "Distributions on Our Common Stock," will generally be exempt from U.S. backup withholding.

Information reporting and backup withholding generally will apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that an appropriate claim is timely filed with the IRS.

Withholding and Information Reporting Requirements—FATCA

The Foreign Account Tax Compliance Act, or FATCA, generally imposes U.S. federal withholding tax of 30% on payments of dividends of, and gross proceeds from the sale or disposition of, our common stock if paid to a foreign entity unless (i) if the foreign entity is a "foreign financial institution," the foreign entity undertakes certain due diligence, reporting, withholding, and certification obligations, (ii) if the foreign entity is not a "foreign financial institution," the foreign entity identifies certain of its U.S. investors, if any, or (iii) the foreign entity is otherwise exempt under FATCA. Under applicable U.S. Treasury regulations, withholding under FATCA generally (1) applies to payments of dividends on our common stock and (2) will apply to payments of gross proceeds from a sale or other disposition of our common stock made after December 31, 2016. Under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of the tax. Withholding under FATCA generally will not be reduced or limited by bilateral income tax treaties. However, a non-U.S. holder may be exempt from FATCA withholding under an applicable intergovernmental agreement between the U.S. and a foreign government relating to the implementation of FATCA, provided that the non-U.S. holder and the foreign government comply with the terms of the agreement. Non-U.S. holders should consult their own tax advisors regarding the possible implications of FATCA on their investment in our common stock, and the entities through which they hold our common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of this 30% withholding tax under FATCA.

UNDERWRITING

Citigroup Global Markets Inc. and Cowen and Company, LLC are acting as joint book-running managers of this offering and as representatives of the underwriters named below. Subject to the terms and conditions stated in the underwriting agreement dated the date of this prospectus, the underwriters named below have severally agreed to purchase, and we have agreed to sell to them, the number of shares of our common stock indicated below:

Underwriter	Number of Shares
Citigroup Global Markets Inc.	
Cowen and Company, LLC	
Oppenheimer & Co. Inc.	
Wedbush Securities Inc.	
Total	

The underwriting agreement provides that the obligations of the underwriters to purchase the shares of our common stock included in this offering are subject to approval of legal matters by counsel and to other conditions. The underwriters are obligated to purchase all of the shares of our common stock (other than those covered by the over-allotment option described below) if they purchase any of the shares.

Shares of our common stock sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover page of this prospectus. Any shares of our common stock sold by the underwriters to securities dealers may be sold at a discount from the initial public offering price not to exceed $ per share. After the initial offering of the shares of our common stock, if all the shares of our common stock are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. The representatives have advised us that the underwriters do not intend to make sales to discretionary accounts.

If the underwriters sell more shares of our common stock than the total number set forth in the table above, we have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to additional shares of our common stock at the initial public offering price less the underwriting discount. The underwriters may exercise the option solely for the purpose of covering over-allotments, if any, in connection with this offering. To the extent the option is exercised, each underwriter must purchase a number of additional shares of our common stock approximately proportionate to that underwriter's initial purchase commitment set forth in the table above. Any shares of our common stock issued or sold under the option will be issued and sold on the same terms and conditions as the other shares of our common stock that are the subject of this offering.

We, our officers and directors and substantially all of our stockholders have agreed that, subject to specified limited exceptions, for a period of 180 days from the date of this prospectus, we and they will not, without the prior written consent of Citigroup Global Markets Inc. and Cowen and Company, LLC, offer, sell, contract to sell, pledge or otherwise dispose of, or hedge any shares of our capital stock or any securities convertible into, or exercisable or exchangeable for, our capital stock. Citigroup Global Markets Inc. and Cowen and Company, LLC in their sole discretion may release any of the securities subject to these lock-up agreements at any time, which, in the case of officers and directors, shall be with notice.

Prior to this offering, there has been no public market for our shares. Consequently, the initial public offering price for the shares of our common stock will be determined by negotiations between us and the representatives. Among the factors considered in determining the initial public offering price

will be our results of operations, our current financial condition, our future prospects, our markets, the economic conditions in and future prospects for the industry in which we compete, our management, and currently prevailing general conditions in the equity securities markets, including current market valuations of publicly traded companies considered comparable to our company. We cannot assure you, however, that the price at which the shares of our common stock will sell in the public market after this offering will not be lower than the initial public offering price or that an active trading market in our shares of common stock will develop and continue after this offering.

We intend to have our shares of common stock listed on The Nasdaq Global Market under the symbol "CATB."

The following table shows the per share and total underwriting discounts and commissions that we are to pay to the underwriters in connection with this offering. These amounts are shown assuming both no exercise and full exercise of the underwriters' over-allotment option:

	Paid by Catabasis	
	No exercise	Full exercise
Per share	$	$
Total	$	$

We estimate that expenses payable by us in connection with this offering, exclusive of underwriting discounts and commissions payable by us, will be approximately $. We have also agreed to reimburse the underwriters for expenses in an amount up to $ relating to the clearance of this offering with the Financial Industry Regulatory Authority, Inc.

In connection with this offering, the underwriters may purchase and sell shares of our common stock in the open market. Purchases and sales in the open market may include short sales, purchases to cover short positions, which may include purchases pursuant to the underwriters' over-allotment option, and other transactions that would stabilize, maintain or otherwise affect the price of our common stock.

- Short sales involve secondary market sales by the underwriters of a greater number of shares of our common stock than they are required to purchase in this offering:
  - "Covered" short sales are sales of shares of our common stock in an amount up to the number of shares of our common stock represented by the underwriters' over-allotment option.
  - "Naked" short sales are sales of shares of our common stock in an amount in excess of the number of shares of our common stock represented by the underwriters' over-allotment option.
- The underwriters can close out a short position by purchasing additional shares of our common stock, either pursuant to the underwriters' over-allotment option or in the open market.
  - To close a naked short position, the underwriters must purchase shares of our common stock in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.
  - To close a covered short position, the underwriters must purchase shares of our common stock in the open market or exercise their over-allotment option. In determining the source of shares of our common stock to close the covered short position, the underwriters will consider, among other things, the price of shares of our common stock available for purchase in the open market as compared to the price at which they may purchase shares of our common stock through their over-allotment option.

- As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of our common stock on NASDAQ, as long as such bids do not exceed a specified maximum, to stabilize the price of the shares of our common stock.

Purchases to cover short positions and stabilizing purchases, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of the shares. They may also cause the price of the shares of our common stock to be higher than the price that would otherwise prevail in the open market in the absence of these transactions. The underwriters may conduct these transactions on NASDAQ, in the over-the-counter market or otherwise. The underwriters are not required to engage in any of these transactions and may discontinue them at any time.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make because of any of those liabilities.

A prospectus in electronic format may be made available on websites maintained by one or more of the underwriters or their respective affiliates. The representatives may agree with us to allocate a number of shares of our common stock to underwriters for sale to their online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' or their respective affiliates' websites and any information contained in any other website maintained by any of the underwriters or their respective affiliates is not part of this prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors in this offering.

Conflicts of Interest

The underwriters are full-service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities. The underwriters and their respective affiliates may, from time to time, engage in transactions with and perform services for us in the ordinary course of their business for which they may receive customary fees and reimbursement of expenses. In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Notice to Prospective Investors in the European Economic Area

In relation to each member state of the European Economic Area that has implemented the Prospectus Directive (each, a relevant member state), with effect from and including the date on which the Prospectus Directive is implemented in that relevant member state (the relevant implementation date), an offer of shares of our common stock described in this prospectus may not be made to the public in that relevant member state other than:

- to any legal entity which is a qualified investor as defined in the Prospectus Directive;

- to fewer than 100 or, if the relevant member state has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the relevant Dealer or Dealers nominated by us for any such offer; or

- in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares of our common stock shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For purposes of this provision, the expression an "offer of securities to the public" in any relevant member state means the communication in any form and by any means of sufficient information on the terms of the offer and the shares of our common stock to be offered so as to enable an investor to decide to purchase or subscribe for any shares of our common stock, as the expression may be varied in that member state by any measure implementing the Prospectus Directive in that member state, the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the relevant member state) and includes any relevant implementing measure in the relevant member state, and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

The sellers of the shares of our common stock have not authorized and do not authorize the making of any offer of shares of our common stock through any financial intermediary on their behalf, other than offers made by the underwriters with a view to the final placement of the shares of our common stock as contemplated in this prospectus. Accordingly, no purchaser of the shares of our common stock, other than the underwriters, is authorized to make any further offer of the shares of our common stock on behalf of the sellers or the underwriters.

Notice to Prospective Investors in the United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, or the Order, or (ii) high net worth entities, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (each such person being referred to as a relevant person).

This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

Notice to Prospective Investors in Australia

No prospectus or other disclosure document (as defined in the Corporations Act 2001 (Cth) of Australia, or Corporations Act) in relation to our common stock has been or will be lodged with the Australian Securities & Investments Commission, or ASIC. This document has not been lodged with ASIC and is only directed to certain categories of exempt persons. Accordingly, if you receive this document in Australia:

- you confirm and warrant that you are either:

  - a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;

  - a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to us which complies with the requirements of

section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;

- a person associated with the company under section 708(12) of the Corporations Act; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act, and to the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this document is void and incapable of acceptance; and

- you warrant and agree that you will not offer any of our common stock for resale in Australia within 12 months of that common stock being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

Notice to Prospective Investors in France

Neither this prospectus nor any other offering material relating to the shares of our common stock described in this prospectus has been submitted to the clearance procedures of the *Autorité des Marchés Financiers* or of the competent authority of another member state of the European Economic Area and notified to the *Autorité des Marchés Financiers*. The shares of our common stock have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in France. Neither this prospectus nor any other offering material relating to the shares of our common stock has been or will be:

- released, issued, distributed or caused to be released, issued or distributed to the public in France; or
- used in connection with any offer for subscription or sale of the shares of our common stock to the public in France.

Such offers, sales and distributions will be made in France only:

- to qualified investors (*investisseurs qualifiés*) and/or to a restricted circle of investors (*cercle restreint d'investisseurs*), in each case investing for their own account, all as defined in, and in accordance with articles L.411-2, D.411-1, D.411-2, D.734-1, D.744-1, D.754-1 and D.764-1 of the French Code monétaire et financier;
- to investment services providers authorized to engage in portfolio management on behalf of third parties; or
- in a transaction that, in accordance with article L.411-2-II-1°-or-2°-or 3° of the French Code *monétaire et financier* and article 211-2 of the General Regulations (*Règlement Général*) of the *Autorité des Marchés Financiers*, does not constitute a public offer (*appel public à l'épargne*).

The shares of our common stock may be resold directly or indirectly, only in compliance with articles L.411-1, L.411-2, L.412-1 and L.621-8 through L.621-8-3 of the French Code *monétaire et financier*.

Notice to Prospective Investors in Chile

The shares of our common stock are not registered in the Securities Registry (Registro de Valores) or subject to the control of the Chilean Securities and Exchange Commission (Superintendencia de Valores y Seguros de Chile). This prospectus and other offering materials relating to the offer of the shares do not constitute a public offer of, or an invitation to subscribe for or purchase, the shares in the Republic of Chile, other than to individually identified purchasers pursuant to a private offering within the meaning of Article 4 of the Chilean Securities Market Act (Ley de Mercado de Valores) (an

offer that is not "addressed to the public at large or to a certain sector or specific group of the public").

Notice to Prospective Investors in Hong Kong

The shares of our common stock may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong) and no advertisement, invitation or document relating to the shares of our common stock may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares of our common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Notice to Prospective Investors in the State of Israel

In the State of Israel this prospectus shall not be regarded as an offer to the public to purchase shares of common stock under the Israeli Securities Law, 5728 - 1968, which requires a prospectus to be published and authorized by the Israel Securities Authority, if it complies with certain provisions of Section 15 of the Israeli Securities Law, 5728 - 1968, including, inter alia, if: (i) the offer is made, distributed or directed to not more than 35 investors, subject to certain conditions (the "Addressed Investors"); or (ii) the offer is made, distributed or directed to certain qualified investors defined in the First Addendum of the Israeli Securities Law, 5728 - 1968, subject to certain conditions (the "Qualified Investors"). The Qualified Investors shall not be taken into account in the count of the Addressed Investors and may be offered to purchase securities in addition to the 35 Addressed Investors. The company has not and will not take any action that would require it to publish a prospectus in accordance with and subject to the Israeli Securities Law, 5728 - 1968. We have not and will not distribute this prospectus or make, distribute or direct an offer to subscribe for our common stock to any person within the State of Israel, other than to Qualified Investors and up to 35 Addressed Investors.

Qualified Investors may have to submit written evidence that they meet the definitions set out in of the First Addendum to the Israeli Securities Law, 5728 - 1968. In particular, we may request, as a condition to be offered common stock, that Qualified Investors will each represent, warrant and certify to us and/or to anyone acting on our behalf: (i) that it is an investor falling within one of the categories listed in the First Addendum to the Israeli Securities Law, 5728 - 1968; (ii) which of the categories listed in the First Addendum to the Israeli Securities Law, 5728 - 1968 regarding Qualified Investors is applicable to it; (iii) that it will abide by all provisions set forth in the Israeli Securities Law, 5728 - 1968 and the regulations promulgated thereunder in connection with the offer to be issued common stock; (iv) that the shares of common stock that it will be issued are, subject to exemptions available under the Israeli Securities Law, 5728 - 1968: (a) for its own account; (b) for investment purposes only; and (c) not issued with a view to resale within the State of Israel, other than in accordance with the provisions of the Israeli Securities Law, 5728 - 1968; and (v) that it is willing to provide further evidence of its Qualified Investor status. Addressed Investors may have to submit written evidence in respect of their identity and may have to sign and submit a declaration containing, inter alia, the Addressed Investor's name, address and passport number or Israeli identification number.

Notice to Prospective Investors in Japan

The shares of our common stock offered in this prospectus have not been and will not be registered under the Financial Instruments and Exchange Law of Japan. The shares of our common stock have not been offered or sold and will not be offered or sold, directly or indirectly, in Japan or to or for the account of any resident of Japan (including any corporation or other entity organized under the laws of Japan), except (i) pursuant to an exemption from the registration requirements of the Financial Instruments and Exchange Law and (ii) in compliance with any other applicable requirements of Japanese law.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares of our common stock may not be circulated or distributed, nor may the shares of our common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to compliance with conditions set forth in the SFA.

Where the shares of our common stock are subscribed or purchased under Section 275 of the SFA by a relevant party which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

shares, debentures and units of shares of our common stock and debentures of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares of our common stock pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor (for corporations, under Section 274 of the SFA) or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares of our common stock and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than $200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions specified in Section 275 of the SFA;

- where no consideration is or will be given for the transfer; or

- where the transfer is by operation of law.

LEGAL MATTERS

The validity of the shares of our common stock offered hereby is being passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP. Cooley LLP is acting as counsel for the underwriters in connection with this offering.

EXPERTS

Ernst & Young, LLP, independent registered public accounting firm, has audited our financial statements at December 31, 2012 and December 31, 2013, and for the years then ended, as set forth in their report. We have included our financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of our common stock we are offering to sell. This prospectus, which constitutes part of the registration statement, does not include all of the information contained in the registration statement and the exhibits, schedules and amendments to the registration statement. For further information with respect to us and our common stock, we refer you to the registration statement and to the exhibits and schedules to the registration statement. Statements contained in this prospectus about the contents of any contract, agreement or other document are not necessarily complete, and, in each instance, we refer you to the copy of the contract, agreement or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference to such contract, agreement or document.

You may read and copy the registration statement of which this prospectus is a part at the SEC's public reference room, which is located at 100 F Street, N.E., Room 1580, Washington, DC 20549. You can request copies of the registration statement by writing to the Securities and Exchange Commission and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC's public reference room. In addition, the SEC maintains an Internet website, which is located at *www.sec.gov*, that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. You may access the registration statement of which this prospectus is a part at the SEC's Internet website. Upon completion of this offering, we will be subject to the information reporting requirements of the Securities Exchange Act of 1934, and we will file reports, proxy statements and other information with the SEC.

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
Catabasis Pharmaceuticals, Inc.

We have audited the accompanying balance sheets of Catabasis Pharmaceuticals, Inc. (the "Company") as of December 31, 2012 and 2013, and the related statements of operations and comprehensive loss, convertible preferred stock and stockholders' (deficit) equity, and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Catabasis Pharmaceuticals, Inc. at December 31, 2012 and 2013, and the results of its operations and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

/s/ Ernst & Young LLP

Boston, Massachusetts
January 23, 2015

Catabasis Pharmaceuticals, Inc.

Balance Sheets

(in thousands, except share and per share data)

	December 31, 2012	December 31, 2013	September 30, 2014 (unaudited)	Pro Forma September 30, 2014 (unaudited)
Assets				
Current assets:				
Cash and cash equivalents	$ 5,434	$ 30,474	$ 15,675	$ 15,675
Available-for-sale investments	—	—	4,976	4,976
Prepaid expenses and other current assets	182	107	272	272
Total current assets	5,616	30,581	20,923	20,923
Property and equipment, net	585	308	277	277
Restricted cash	113	113	113	113
Other assets	—	—	57	57
Total assets	$ 6,314	$ 31,002	$ 21,370	$ 21,370
Liabilities, convertible preferred stock and stockholders' (deficit) equity				
Current liabilities:				
Accounts payable	$ 780	$ 651	$ 1,195	$ 1,195
Accrued expenses	1,108	2,279	2,441	2,441
Total current liabilities	1,888	2,930	3,636	3,636
Deferred rent, net of current portion	138	110	80	80
Notes payable, net of discount	—	—	4,725	4,725
Warrant liability	—	—	110	—
Commitments (Note 8)				
Series A convertible preferred stock, $0.001 par value; 56,772,179 shares authorized at December 31, 2012 and 68,837,703 shares authorized at December 31, 2013 and September 30, 2014 (unaudited); 55,700,752 shares issued and outstanding at December 31, 2012, 68,837,703 shares issued and outstanding at December 31, 2013 and September 30, 2014 (unaudited) and no shares issued and outstanding at September 30, 2014 (pro forma) (unaudited); (aggregate liquidation preference of $48,186 at December 31, 2013 and September 30, 2014 (unaudited))	38,724	47,898	47,898	—

Catabasis Pharmaceuticals, Inc.

Balance Sheets (Continued)

(in thousands, except share and per share data)

	December 31, 2012	December 31, 2013	September 30, 2014 (unaudited)	Pro Forma September 30, 2014 (unaudited)
Series B convertible preferred stock, $0.001 par value; no shares authorized at December 31, 2012 and 37,830,473 shares authorized at December 31, 2013 and September 30, 2014 (unaudited); no shares issued and outstanding at December 31, 2012, 34,129,571 shares issued and outstanding at December 31, 2013 and September 30, 2014 (unaudited) and no shares issued and outstanding at September 30, 2014 (pro forma) (unaudited); (aggregate liquidation preference of $32,433 at December 31, 2013 and September 30, 2014 (unaudited))	—	32,248	32,248	—
Stockholders' (deficit) equity:				
Common stock, $0.001 par value; 75,000,000 shares authorized at December 31, 2012 and 132,000,000 shares authorized at December 31, 2013 and September 30, 2014 (unaudited); 4,810,878, 5,054,688, 5,734,920, and 108,702,194 shares issued and outstanding at December 31, 2012, December 31, 2013, September 30, 2014 (unaudited), and September 30, 2014 (pro forma) (unaudited), respectively	5	5	6	109
Additional paid-in capital	937	1,307	2,021	82,174
Accumulated deficit	(35,378)	(53,496)	(69,354)	(69,354)
Total stockholders' (deficit) equity	(34,436)	(52,184)	(67,327)	12,929
Total liabilities, convertible preferred stock and stockholders' (deficit) equity	$ 6,314	$ 31,002	$ 21,370	$ 21,370

Catabasis Pharmaceuticals, Inc.

Statements of Operations and Comprehensive Loss

(in thousands, except share and per share data)

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Operating expenses:				
Research and development	$ 12,408	$ 13,994	$ 10,253	$ 11,361
General and administrative	3,265	4,125	2,962	4,443
Total operating expenses	15,673	18,119	13,215	15,804
Loss from operations	(15,673)	(18,119)	(13,215)	(15,804)
Other income (expense):				
Other income (expense), net	4	1	(2)	3
Interest expense	—	—	—	(57)
Total other income (expense), net	4	1	(2)	(54)
Net loss and comprehensive loss	$ (15,669)	$ (18,118)	$ (13,217)	$ (15,858)
Net loss per share—basic and diluted	$ (3.35)	$ (3.72)	$ (2.74)	$ (2.99)
Weighted-average number of common shares used in net loss per share—basic and diluted	4,682,198	4,870,362	4,820,036	5,312,210
Pro forma net loss per share—basic and diluted (unaudited)		$ (0.23)		$ (0.15)
Weighted average number of common shares used in pro forma net loss per share—basic and diluted (unaudited)		78,511,025		108,279,484

Catabasis Pharmaceuticals, Inc.

Statements of Convertible Preferred Stock and Stockholders' (Deficit) Equity

(in thousands, except share data)

	Series A Convertible Preferred Stock		Series B Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' (Deficit) Equity
	Shares	Amount	Shares	Amount	Number of Shares	Par Value			
Balance at December 31, 2011	43,200,752	$ 30,001	—	$ —	4,338,278	$ 4	$ 716	$ (19,709)	$ (18,989)
Issuance of series A convertible preferred stock, net of issuance costs of $27	12,500,000	8,723	—	—	—	—	—	—	—
Vesting of restricted common stock	—	—	—	—	287,514	1	2	—	3
Proceeds from exercises of common stock options	—	—	—	—	185,086	—	23	—	23
Stock-based compensation expense	—	—	—	—	—	—	196	—	196
Net loss	—	—	—	—	—	—	—	(15,669)	(15,669)
Balance at December 31, 2012	55,700,752	38,724	—	—	4,810,878	5	937	(35,378)	(34,436)
Issuance of series A convertible preferred stock, net of issuance costs of $22	13,136,951	9,174	—	—	—	—	—	—	—
Issuance of series B convertible preferred stock, net of issuance costs of $185	—	—	34,129,571	32,248	—	—	—	—	—
Proceeds from exercises of common stock options	—	—	—	—	243,810	—	27	—	27
Stock-based compensation expense	—	—	—	—	—	—	343	—	343
Net loss	—	—	—	—	—	—	—	(18,118)	(18,118)
Balance at December 31, 2013	68,837,703	47,898	34,129,571	32,248	5,054,688	5	1,307	(53,496)	(52,184)
Proceeds from exercises of common stock options (unaudited)	—	—	—	—	680,232	1	109	—	110
Stock-based compensation expense (unaudited)	—	—	—	—	—	—	605	—	605
Net loss (unaudited)	—	—	—	—	—	—	—	(15,858)	(15,858)
Balance at September 30, 2014 (unaudited)	68,837,703	47,898	34,129,571	32,248	5,734,920	6	2,021	(69,354)	(67,327)
Conversion of series A convertible preferred stock into common stock (unaudited)	(68,837,703)	(47,898)	—	—	68,837,703	69	47,829	—	47,898
Conversion of series B convertible preferred stock into common stock (unaudited)	—	—	(34,129,571)	(32,248)	34,129,571	34	32,214	—	32,248

Conversion of series B preferred stock warrants into warrants for the purchase of common stock (unaudited)	—	—	—	—	—	—	110	—	110
Pro forma balance at September 30, 2014 (unaudited)	—	$ —	—	$ —	108,702,194	$ 109	$ 82,174	$ (69,354)	$ 12,929

Catabasis Pharmaceuticals, Inc.

Statements of Cash Flows

(in thousands)

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Operating activities				
Net loss	$ (15,669)	$ (18,118)	$ (13,217)	$ (15,858)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and amortization	327	320	249	190
Stock-based compensation expense	196	343	196	605
Non-cash interest expense	—	—	—	21
Changes in operating assets and liabilities:				
Prepaid expenses and other current assets	(40)	75	(143)	(126)
Accounts payable	64	(129)	31	544
Accrued expenses	(518)	1,156	795	151
Deferred rent	57	(13)	(8)	(19)
Net cash used in operating activities	(15,583)	(16,366)	(12,097)	(14,492)
Investing activities				
Purchases of available-for-sale securities	—	—	—	(4,976)
Purchases of property and equipment	(360)	(43)	(18)	(159)
Net cash used in investing activities	(360)	(43)	(18)	(5,135)
Financing activities				
Proceeds from issuance of preferred stock, net of issuance costs	8,723	41,422	9,174	—
Proceeds from exercise of common stock options	23	27	12	110
Proceeds from borrowings	—	—	—	5,000
Debt issuance costs	—	—	—	(282)
Net cash provided by financing activities	8,746	41,449	9,186	4,828
Net (decrease) increase in cash and cash equivalents	(7,197)	25,040	(2,929)	(14,799)
Cash and cash equivalents at beginning of period	12,631	5,434	5,434	30,474
Cash and cash equivalents at end of period	$ 5,434	$ 30,474	$ 2,505	$ 15,675
Supplemental disclosures of cash flow information				
Cash paid during the period for interest	$ —	$ —	$ —	$ 1
Supplemental disclosures of non-cash financing activities:				
Warrants for the purchase of series B preferred stock issued in conjunction with credit facility	$ —	$ —	$ —	$ 110
Vesting of restricted common stock	$ 3	$ —	$ —	$ —

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

1. Nature of Business

Catabasis Pharmaceuticals, Inc. (the "Company") was incorporated on June 26, 2008, as a Delaware corporation with operations based in Cambridge, Massachusetts. The Company is dedicated to the discovery and development of medicines to treat inflammatory and metabolic diseases.

Liquidity

The Company has incurred losses since inception and negative cash flows from operating activities. As of December 31, 2013 and September 30, 2014, the Company had an accumulated deficit of $53.5 million and $69.4 million, respectively. The Company is subject to a number of risks similar to other life science companies, including, but not limited to, successful discovery and development of its drug candidates, raising additional capital, development by its competitors of new technological innovations, protection of proprietary technology and market acceptance of the Company's products. The Company anticipates that it will continue to incur significant operating losses for the next several years as it continues to develop its product candidates. To date, the Company has funded its operations primarily through private placements of its convertible preferred stock and the issuance of debt. The future success of the Company is dependent on its ability to obtain additional capital to develop its product candidates and ultimately upon its ability to attain profitable operations. There is no guarantee that additional equity and or other financings will be available to the Company on acceptable terms, or at all. If the Company fails to obtain additional funding when needed, the Company would be forced to scale back or terminate its operations or seek to merge with or be acquired by another company. Management believes that the Company's existing cash resources will be sufficient to fund the Company's operating plan through at least December 31, 2014.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying financial statements have been prepared in accordance with United States (U.S.) generally accepted accounting principles ("U.S. GAAP") and include all adjustments necessary for the fair presentation of the Company's financial position for the periods presented.

Use of Estimates

The preparation of the Company's financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from such estimates.

The Company utilizes significant estimates and assumptions in determining the fair value of its common stock ("Common Stock"). The board of directors determined the estimated fair value of the Common Stock based on a number of objective and subjective factors, including external market conditions affecting the biotechnology industry sector and the prices at which the Company sold shares of convertible preferred stock, the achievement of research and development milestones, the superior rights and preferences of securities senior to the Common Stock at the time and the likelihood of achieving a liquidity event, such as an initial public offering or sale of the Company.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

The Company utilized various valuation methodologies in accordance with the framework of the American Institute of Certified Public Accountants ("AICPA"), Audit and Accounting Practice Aid Series: Valuation of Privately Held Company Equity Securities Issued as Compensation ("AICPA Practice Aid"), to estimate the fair value of its Common Stock. The methodologies included the Option Pricing Method utilizing the Backsolve Method (a form of the market approach defined in the AICPA Practice Aid) and the Probability-Weighted Expected Return Method based upon the probability of occurrence of certain future liquidity events such as an initial public offering or sale of the Company. Each valuation methodology includes estimates and assumptions that require the Company's judgment. Significant changes to the key assumptions used in the valuations could result in different fair values of Common Stock at each valuation date.

The Company utilizes certain estimates to record expenses relating to research and development contracts. These contract estimates, which are primarily related to the length of service of each contract, are determined by the Company based on input from internal project management, as well as from third-party service providers.

Unaudited Interim Financial Statements

The unaudited interim financial statements as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 and the related interim information contained within the notes to the financial statements are unaudited. The unaudited interim financial statements have been prepared on the same basis as the annual financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary to present fairly the Company's financial position as of September 30, 2014 and its results of operations and cash flows for the nine months ended September 30, 2013 and 2014. The results of operations and cash flows for the nine months ended September 30, 2014 are not necessarily indicative of the results to be expected for the year ending December 31, 2014 or for any other future annual or interim period.

Unaudited Pro Forma Financial Information

In January, 2015, the Company's board of directors authorized the management of the Company to submit on a confidential basis a registration statement with the Securities and Exchange Commission ("SEC") for the Company to sell shares of its Common Stock to the public. Upon the closing of a qualified initial public offering (as defined in the Company's certificate of incorporation), all of the Company's outstanding convertible preferred stock will automatically convert into Common Stock. The unaudited pro forma balance sheet and statement of convertible preferred stock and stockholders' (deficit) equity as of September 30, 2014 assume the conversion of all outstanding convertible preferred stock into shares of Common Stock and the reclassification of the Company's warrant liability to additional paid-in capital, as a result of warrants to purchase preferred stock becoming warrants to purchase Common Stock upon the completion of this proposed offering.

Off-Balance Sheet Risk and Concentrations of Credit Risk

The Company has no off-balance sheet risk, such as foreign exchange contracts, option contracts or other foreign hedging arrangements. Financial instruments that subject the Company to credit risk

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

primarily consist of cash and cash equivalents, restricted cash and available-for-sale securities. The Company's available-for-sale investments primarily consist of U.S. Treasury securities and certain U.S. government sponsored securities and potentially subject the Company to concentrations of credit risk. The primary objectives for the Company's investment portfolio are the preservation of capital and the maintenance of liquidity. The Company's investment policy includes guidelines on the quality of the institutions and financial instruments and defines allowable investments that the Company believes minimizes the exposure to concentration of credit risk.

Cash and Cash Equivalents

The Company considers highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. Cash equivalents, which consist primarily of money market funds, are stated at fair value. Cash and cash equivalents consist of the following (in thousands):

	December 31,		September 30,
	2012	2013	2014
Cash	$ 1,434	$ 1,472	$ 1,146
Money market fund	4,000	29,002	13,604
U.S. government agency bonds with original maturities less than three months	—	—	925
	$ 5,434	$ 30,474	$ 15,675

Available-for-Sale Investments

The Company classifies all short-term investments with a remaining maturity when purchased of greater than three months as available-for-sale. Available-for-sale securities are recorded at fair value, with the unrealized gains and losses reported in other comprehensive income (loss). The amortized cost of debt securities in this category is adjusted for the amortization of premiums and accretion of discounts to maturity. Such amortization is included in other income (expense), net. Realized gains and losses, interest, dividends and declines in value judged to be other than temporary on available-for-sale securities are included in other income (expense), net.

The cost of securities sold is based on the specific identification method for purposes of recording realized gains and losses. To determine whether an other-than-temporary impairment exists, the Company considers whether it has the ability and intent to hold the investment until a market price recovery, and whether evidence indicating the recoverability of the cost of the investment outweighs evidence to the contrary. There were no other-than-temporary impairments for the nine months ended September 30, 2014.

Fair Value of Financial Instruments

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three broad levels as follows: Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities; Level 2 inputs are inputs other than quoted prices included within Level 1

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

that are observable for the asset or liability, either directly or indirectly; and Level 3 inputs are unobservable inputs that reflect the Company's own assumptions about the assumptions market participants would use in pricing the asset or liability. Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

The Company's investment portfolio includes fixed income securities that do not always trade on a daily basis. As a result, the pricing services used by the Company apply other available information as applicable through processes such as benchmark yields, benchmarking of like securities, sector groupings and matrix pricing to prepare valuations. In addition, model processes were used to assess interest rate impact and develop prepayment scenarios. These models take into consideration relevant credit information, perceived market movements, sector news and economic events. The inputs into these models may include benchmark yields, reported trades, broker-dealer quotes, issuer spreads and other relevant data.

The following table presents information about the Company's financial assets and liabilities that have been measured at fair value, and indicates the fair value hierarchy of the valuation inputs utilized to determine such fair value. The Company determines the fair value of the preferred stock warrants (Note 11) using Level 3 inputs.

The following table summarizes the assets and liabilities measured at fair value on a recurring basis at December 31, 2012 (in thousands):

	Balance at December 31, 2012	Level 1	Level 2	Level 3
Assets:				
Cash equivalents	$ 4,000	$ 4,000	$ —	$ —
Total	$ 4,000	$ 4,000	$ —	$ —

The following table summarizes the assets and liabilities measured at fair value on a recurring basis at December 31, 2013 (in thousands):

	Balance at December 31, 2013	Level 1	Level 2	Level 3
Assets:				
Cash equivalents	$ 29,002	$ 29,002	$ —	$ —
Total	$ 29,002	$ 29,002	$ —	$ —

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

The following table summarizes the assets and liabilities measured at fair value on a recurring basis at September 30, 2014 (in thousands):

	Balance at September 30, 2014	Level 1	Level 2	Level 3
Assets:				
Cash equivalents	$ 14,530	$ 14,530	$ —	$ —
Available-for-sale investments	4,976	—	4,976	—
Total	$ 19,506	$ 14,530	$ 4,976	$ —
Liabilities:				
Warrant liability	$ 110	$ —	$ —	$ 110
Total	$ 110	$ —	$ —	$ 110

The carrying amounts reflected in the balance sheets for cash and cash equivalents, restricted cash, prepaid expenses and other current assets, other assets, accounts payable and accrued expenses approximate their fair values at December 31, 2012 and 2013 and September 30, 2014, due to their short-term nature.

There have been no changes to the valuation methods during the years ended December 31, 2012 and 2013 or the nine months ended September 30, 2013 and 2014. The Company evaluates transfers between levels at the end of each reporting period. There were no transfers of assets or liabilities between levels during the years ended December 31, 2012 and 2013 or the nine months ended September 30, 2013 and 2014. At September 30, 2014, the carrying value of the Company's debt approximated fair value, which was determined using Level 3 inputs, including a quoted interest rate.

Property and Equipment

Property and equipment consist of laboratory equipment, computer equipment, leasehold improvements and furniture and fixtures. Property and equipment is stated at cost and depreciated using the straight-line method over the estimated useful lives of the respective assets. Costs of major additions and betterments are capitalized; maintenance and repairs, which do not improve or extend the life of the respective assets, are charged to expense as incurred. Upon retirement or sale, the cost of the disposed asset and the related accumulated depreciation are removed from the accounts and the resulting gain or loss is recognized.

Impairment of Long-Lived Assets

The Company continually evaluates whether events or circumstances have occurred that indicate that the estimated remaining useful life of its long-lived assets may warrant revision or that the carrying value of these assets may be impaired. The Company has not recognized any impairment charges through September 30, 2014.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

Warrant Liability

The Company accounts for warrant instruments that either conditionally or unconditionally obligate the Company to transfer assets as liabilities regardless of the timing of the redemption feature or price, even though the underlying shares may be classified as permanent or temporary equity. These warrants are subject to revaluation at each balance sheet date, and any changes in fair value are recorded as a component of interest expense, until the earlier of their exercise or expiration or the completion of a liquidation event, including the completion of an initial public offering, at which time the warrant liability may be reclassified to stockholders' (deficit) equity if the criteria for recording the warrant as an equity instrument are met. The warrant liability totaled $0, $0 and $0.1 million at December 31, 2012 and 2013 and September 30, 2014, respectively (Note 11).

Research and Development Expenses

Research and development costs are expensed as incurred. Research and development costs include salaries and personnel-related costs, stock-based compensation, consulting fees, fees paid for contract research services, the costs of laboratory equipment and facilities and other external costs.

Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred. The deferred amounts are expensed as the related goods are delivered or the services are performed.

Stock-Based Compensation

The Company accounts for its stock-based compensation awards in accordance with Accounting Standards Codification ("ASC") Topic 718, *Compensation—Stock Compensation* ("ASC 718"). ASC 718 requires all share-based payments to employees, including grants of employee stock options, to be recognized in the statements of operations based on their grant date fair values. For stock options granted to employees and to members of the board of directors for their services on the board of directors, the Company estimates the grant date fair value of each option award using the Black-Scholes option-pricing model. The use of the Black-Scholes option-pricing model requires management to make assumptions with respect to the expected term of the option, the expected volatility of the Common Stock consistent with the expected life of the option, risk-free interest rates and expected dividend yields of the Common Stock. For awards subject to service-based vesting conditions, the Company recognizes stock-based compensation expense, net of estimated forfeitures, equal to the grant date fair value of stock options on a straight-line basis over the requisite service period.

The Company expenses restricted stock awards based on the fair value of the award on a straight-line basis over the associated service period of the award.

Share-based payments issued to non-employees are recorded at their fair values, and are periodically revalued as the equity instruments vest and are recognized as expense over the related service period in accordance with the provisions of ASC Topic 505, *Equity*. For equity instruments granted to non-employees, the Company recognizes stock-based compensation expense on a straight-line basis.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

During the years ended December 31, 2012 and 2013, and the nine months ended September 30, 2013 and 2014, the Company recorded stock-based compensation expense for employee and non-employee stock options and restricted stock, which was allocated as follows in the statements of operations (in thousands):

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
Research and development expense	$ 131	$ 224	$ 128	$ 289
General and administrative expense	65	119	68	316
	$ 196	$ 343	$ 196	$ 605

No related tax benefits were recognized for the years ended December 31, 2012 and 2013 or for the nine months ended September 30, 2013 and 2014.

Grant Awards

In the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, the Company received $85,000, $35,000, $0 and $0, respectively, in grants from the Muscular Dystrophy Association. The awards were recorded as a reduction to research and development expenses as the related expenses were incurred in the Company's statements of operations and comprehensive loss.

Net Loss Per Share and Unaudited Pro Forma Net Loss Per Share

Basic net loss per share is calculated by dividing net loss by the weighted average shares outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is calculated by adjusting weighted average shares outstanding for the dilutive effect of common stock equivalents outstanding for the period, determined using the treasury-stock method. For purposes of the dilutive net loss per share calculation, preferred stock, stock options, warrants to purchase Common Stock and warrants to purchase preferred stock are considered to be common stock equivalents but are excluded from the calculation of diluted net loss per share, as their effect would be anti-dilutive; therefore, basic and diluted net loss per share were the same for all periods presented.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

The following Common Stock equivalents were excluded from the calculation of diluted net loss per share for the periods indicated because including them would have had an anti-dilutive effect:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
Convertible preferred stock	55,700,752	102,967,274	68,837,703	102,967,274
Stock options	9,235,559	10,883,243	11,116,265	15,609,837
Common stock warrants	447,850	447,850	447,850	447,850
Preferred stock warrants	—	—	—	157,844
	65,384,161	114,298,367	80,401,818	119,182,805

Unaudited pro forma net loss per share is computed using the weighted-average number of common shares outstanding after giving effect to the conversion of all convertible preferred stock into shares of the Common Stock as if such conversion had occurred at the beginning of the period presented, or the date of original issuance, if later.

Income Taxes

The Company provides deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the Company's financial statement carrying amounts and the tax basis of assets and liabilities using enacted tax rates expected to be in effect in the years in which the differences are expected to reverse. A valuation allowance is provided to reduce the deferred tax assets to the amount that will more likely than not be realized.

The Company accounts for uncertain tax positions in accordance with the provisions of ASC Topic 740, *Expenses—Income Taxes*. When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. As of December 31, 2012 and 2013 and September 30, 2014, the Company did not have any significant uncertain tax positions.

Segment Information

Operating segments are identified as components of an enterprise for which separate discrete financial information is available for evaluation by the chief operating decision maker, or decision making group, in making decisions on how to allocate resources and assess performance. The Company views its operations and manages its business in one operating segment. The Company operates in one geographic segment.

Comprehensive Loss

Comprehensive loss is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. For the years ended December 31, 2012 and 2013 and for the nine months ended September 30, 2013 and 2014, comprehensive loss was equal to net loss.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

2. Summary of Significant Accounting Policies (Continued)

Recently Issued or Adopted Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board ("FASB") or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on its financial position or results of operations upon adoption.

In June 2014, the FASB issued Accounting Standards Update ("ASU") 2014-10, *Development Stage Entities (Topic 915)* ("ASU 2014-10"), which removes the definition of a development stage entity from the ASC, thereby removing the financial reporting distinction between development stage entities and other reporting entities. Accordingly, ASU 2014-10 eliminates the requirements for development stage entities to (1) present inception-to-date information in the statements of operations, cash flows and shareholder equity, (2) label financial statements as those of a development stage entity, (3) disclose a description of the development stage activities in which the entity is engaged and (4) disclose in the first year in which the entity is no longer a development stage entity that in prior years it had been in the development stage. ASU 2014-10 is effective for public business entities for annual periods beginning after December 15, 2014, and interim reporting periods beginning after December 15, 2015, with early adoption permitted. The Company early adopted the provisions of ASU 2014-10 in these financial statements.

3. Available-for-Sale Investments

The following tables summarize the available-for-sale securities held at September 30, 2014 (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
September 30, 2014:				
U.S. government agency bonds	$ 4,976	$ —	$ —	$ 4,976
Total	$ 4,976	$ —	$ —	$ 4,976

The contractual maturities of all securities held at September 30, 2014 were one year or less. The Company reviews its investments for other-than-temporary impairment whenever the fair value of an investment is less than amortized cost and evidence indicates that an investment's carrying amount is not recoverable within a reasonable period of time. To determine whether impairment is other-than-temporary, the Company considers whether it has the ability and intent to hold the investment until a market price recovery and considers whether evidence indicating the cost of the investment is recoverable outweighs evidence to the contrary. The Company does not intend to sell the investments and it is not more likely than not that the Company will be required to sell the investments before recovery of their amortized cost bases, which may be maturity. The Company did not hold any securities with other-than-temporary impairment at September 30, 2014. The Company did not hold any available-for-sale securities as of December 31, 2012 or 2013.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

3. Available-for-Sale Investments (Continued)

There were no proceeds or gross realized gains or losses included in the statements of operations and comprehensive loss from the sale of available-for-sale investments during the nine months ended September 30, 2014. Net unrealized holding gains or losses included in accumulated other comprehensive income (loss), as well as gains and losses reclassified out of accumulated other comprehensive income (loss) into other income (expense), net were not material to the Company's results of operations. The cost of securities sold or the amount reclassified out of the accumulated other comprehensive income (loss) into other income (expense), net, is based on the specific identification method for purposes of recording realized gains and losses. There were no transfers of available-for-sale securities into trading securities.

4. Property and Equipment

Property and equipment and related accumulated depreciation were as follows (in thousands):

	Estimated Useful Life (Years)	December 31, 2012	December 31, 2013	September 30, 2014
Lab equipment	3	$ 1,045	$ 1,068	$ 1,201
Computer equipment	3	88	108	114
Furniture and fixtures	5	30	30	30
Leasehold improvements	Lesser of useful life or remaining lease term	57	57	57
		1,220	1,263	1,402
Less accumulated depreciation and amortization		(635)	(955)	(1,125)
Total property and equipment, net		$ 585	$ 308	$ 277

Depreciation and amortization expense was $0.3 million, $0.3 million, $0.2 million and $0.2 million for the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, respectively.

5. Restricted Cash

At December 31, 2012 and 2013 and September 30, 2014, the Company had an outstanding letter of credit for $0.1 million as a security deposit for its operating lease agreement for office space (Note 8). The Company is required to maintain this deposit for the duration of the lease agreement.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

6. Accrued Expenses

Accrued expenses consisted of the following (in thousands):

	December 31, 2012	December 31, 2013	September 30, 2014
Accrued compensation	$ 633	$ 785	$ 775
Accrued contracted research costs	324	1,266	1,395
Accrued professional fees	116	135	105
Accrued other	35	93	166
Total	$ 1,108	$ 2,279	$ 2,441

7. Notes Payable

On August 27, 2014, the Company entered into a loan and security agreement (the "Credit Facility"). The Credit Facility provides for initial borrowings of $5.0 million under a term loan ("Term Loan A") and additional borrowings of up to $20.0 million under other term loans, for a maximum of $25.0 million. On August 27, 2014, the Company received proceeds of $5.0 million from the issuance of promissory notes under the Term Loan A. Of the additional $20.0 million amount available, $10.0 million ("Term Loan B") is available to be drawn until March 31, 2015. An additional $10.0 million ("Term Loan C") is available until June 30, 2015, subject to the completion of an initial public offering with net cash proceeds to the Company of at least $50.0 million. All promissory notes issued under the Credit Facility are due on October 1, 2018 and are collateralized by substantially all of the Company's personal property, other than its intellectual property. As of September 30, 2014, the Company had not drawn the Term Loan B and Term Loan C.

The Company is obligated to make monthly, interest-only payments on any term loans funded under the Credit Facility until September 1, 2015 and, thereafter, to pay 36 consecutive, equal monthly installments of principal and interest from October 1, 2015 through September 1, 2018. Term loans under the Credit Facility bear interest at an annual rate of 7.49%. In addition, a final payment equal to 3.48% of any amounts drawn under the Credit Facility is due upon the earlier of the maturity date, acceleration of the term loans or prepayment of all or part of the term loans. The final payment is being accrued as additional interest expense using the effective-interest method from the date of issuance through the maturity date. The effective interest rate for the Term Loan A, including the final payment and non-cash interest, is 11.9%.

In the event of prepayment, the Company is obligated to pay 1% to 3% of the amount of the outstanding principal depending upon the timing of the prepayment.

In conjunction with the Credit Facility, the Company issued warrants to purchase 157,844 shares of Series B convertible preferred stock at an exercise price of $0.9503 per share (the "2014 Warrants") to the lenders. The 2014 Warrants were exercisable immediately and have a seven-year life. The 2014 Warrants were initially valued at $0.1 million using the Black-Scholes option-pricing model. The Company recorded a debt discount of $0.1 million upon issuance of the 2014 Warrants, which is being accreted as interest expense using the effective-interest method over the remaining term of the loan. The Company recorded interest expense of $4,000 for the nine months ended September 30, 2014 related to accretion of such discount. The Company recorded a warrant liability (Note 11) that is classified as a long-term liability in the accompanying balance sheets.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

7. Notes Payable (Continued)

There are no financial covenants associated with the Credit Facility; however, there are negative covenants restricting the Company's activities, including limitations on asset dispositions, mergers or acquisitions; encumbering or granting a security interest in its intellectual property; incurring indebtedness or liens; paying dividends; making certain investments; and entering into certain other business transactions.

The Credit Facility also includes events of default, the occurrence and continuation of any of which provides the lenders the right to exercise remedies against the Company and the collateral securing the loans under the Credit Facility, including cash. These events of default include, among other things, failure to pay amounts due under the Credit Facility, insolvency, the occurrence of a material adverse event, which includes a material adverse change in the business, operations or conditions (financial or otherwise) of the Company or a material impairment of the prospect of repayment of any portion of the obligations, the occurrence of any default under certain other indebtedness and a final judgment against the Company in an amount greater than $250,000. At September 30, 2014, the Company concluded that a material adverse change had not occurred and was unlikely to occur and therefore the debt was classified as a long-term liability. Following the occurrence and during the continuance of an event of default, borrowings under the Credit Facility shall bear interest at a rate per annum which is five hundred basis points (5.00%) above the rate that is otherwise applicable.

The Company assessed all terms and features of the Credit Facility in order to identify any potential embedded features that would require bifurcation or any beneficial conversion features. As part of this analysis, the Company assessed the economic characteristics and risks of the Credit Facility, including put and call features. The Company determined that all features of the Credit Facility are clearly and closely associated with a debt host and do not require bifurcation as a derivative liability, or the fair value of the feature is immaterial to the Company's financial statements. The Company will continue to reassess the features on a quarterly basis to determine if they require separate accounting.

Estimated future principal payments due under Term Loan A are as follows (in thousands):

Year ending December 31:	
2014	$ —
2015	416
2016	1,667
2017	1,667
2018	1,250
Total	$ 5,000
Less: discount for warrants and costs paid to lender	(275)
Note payable, net of discount	$ 4,725

During the nine months ended September 30, 2014, the Company recognized $0.1 million of interest expense related to the Credit Facility. The Company had no debt outstanding as of December 31, 2012 or 2013.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

8. Commitments

In November 2010, the Company entered into a five-year, non-cancelable operating lease for office and laboratory space. In December 2011, the Company signed a lease amendment that expanded the leased premises beginning in the second quarter of 2012. The lease amendment also extended the term of the existing lease through June 30, 2017. The expansion lease includes a free rent period and escalating rent payments. The Company is recognizing rent expense on a straight-line basis over the lease term. The lease agreement provides for a five-year extension upon the completion of the lease term.

The future minimum lease payments under the non-cancelable operating lease are as follows (in thousands):

Year ending December 31:	
2014	$ 187
2015	756
2016	760
2017	378
Total	$ 2,081

Rent expense for the years ended December 31, 2012 and 2013 and for the nine months ended September 30, 2013 and September 30, 2014, was $0.7 million, $0.7 million, $0.5 million and $0.5 million, respectively.

9. Convertible Preferred Stock

On June 1, 2012, the Company's board of directors determined that the third tranche milestones pursuant to the Series A convertible preferred stock ("Series A Preferred Stock") financing in 2010, which provided for additional closings upon the achievement of certain milestones, had been achieved. The Company issued 12,500,000 shares of Series A Preferred Stock to the investors, representing half of the third tranche at $0.70 per share, and received net proceeds of $8.7 million in July 2012.

On December 18, 2012, the Company's board of directors approved the remainder of the third tranche under the Series A Preferred Stock purchase agreement. Accordingly, the Company issued 12,499,999 shares of Series A Preferred Stock at $0.70 per share and received net proceeds of $8.8 million in January 2013.

On April 17, 2013, the Company's board of directors authorized the Company to increase the authorized number of shares of Series A Preferred Stock to 68,837,703. The Company subsequently issued 636,952 shares of Series A Preferred Stock at $0.70 per share, and received net proceeds of $0.4 million.

On October 31, 2013, the Company completed a Series B convertible preferred stock ("Series B Preferred Stock") financing and issued 34,129,571 shares of Series B Preferred Stock at $0.9503 per share, for net proceeds of $32.2 million.

The Company assessed the Series A and Series B Preferred Stock for any beneficial conversion features or embedded derivatives, including the conversion option, that would require bifurcation from the Series A and Series B Preferred Stock and receive seperate accounting treatment. Based on the Company's determination that the Preferred Stock is an "equity host," the Company determined that

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

9. Convertible Preferred Stock (Continued)

all features of the Preferred Stock are clearly and closely related to the equity host, and do not require bifurcation as a derivative liability. On the date of issuance, the fair value of Common Stock into which the Series A and Series B Preferred Stock was convertible was less than the effective conversion price of the Series A and Series B Preferred Stock, and as such, there was no intrinsic value of the conversion option at the commitment date.

The Series A Preferred Stock and Series B Preferred Stock (collectively, the "Preferred Stock") have the following rights and preferences:

Voting

Holders of Preferred Stock are entitled to a number of votes equal to the number of shares of Common Stock into which the Preferred Stock is convertible on the date of record. Holders of the Preferred Stock vote together with the holders of Common Stock as a single class, except for the election of the Company's board of directors. For such election, holders of Series A Preferred Stock vote exclusively as a separate class to elect three directors and holders of Series B Preferred Stock vote exclusively as a separate class to elect one director. The remainder of the directors of the Company are elected by the holders of Common Stock and the Preferred Stock voting as a single class. The approval of 60% of the then outstanding shares of Preferred Stock is required for certain events that may impact the rights and preferences of the Preferred Stock, including the liquidation, winding up or disolution of the business, an increase or decrease in the number of shares of Preferred Stock or Common Stock authorized for issuance, amendment of the certificate of incorporation in a manner that adversely effects the rights, preferences or privileges of the Preferred Stock, the purchase or redemption of or payment or declaration of dividends on shares of Preferred Stock or Common Stock, authorization of debt securities exceeding $1.0 million, or the adoption or amendment of any equity-based compensation plans to increase the number of shares issuable thereunder.

Dividends

Dividends accrue on Preferred Stock from the date of issuance at a rate of 8% per annum per share when and if declared by the Company's board of directors. Dividends are not cumulative. The Company has not declared any dividends to date. The Company shall not pay a dividend to other classes of securities until the holders of Preferred Stock have received a dividend of 8% per annum, per share from the date of issuance.

Liquidation Preference

In the event of any liquidation, dissolution, or winding up of the affairs of the Company, the holders of the then-outstanding Preferred Stock shall receive on a pari passu basis, before any payment shall be made to the holders of Common Stock, the greater of (1) $0.70 per share for Series A Preferred Stock plus all declared, but unpaid, dividends, and (2) $0.9503 per share for Series B Preferred Stock plus all declared, but unpaid, dividends, or (3) such amount per share of Preferred Stock payable as if converted into Common Stock. After the payment of any preferential amount to holders of Preferred Stock, any remaining assets of the Company shall be distributed ratably among the holders of Common Stock. If the assets or surplus funds to be distributed to the holders of the Preferred Stock are insufficient to permit the payment to such holders of their full preferential amount,

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

9. Convertible Preferred Stock (Continued)

the assets and surplus funds legally available for distribution shall be distributed ratably among the holders of the Preferred Stock in proportion to the full preferential amount that each holder is otherwise entitled to receive. As the Preferred Stock may become redeemable upon an event that is outside of the control of the Company, the Preferred Stock has been classified outside of permanent equity. Since the Preferred Stock is not initially redeemable and it is not probable that it will become redeemable, the carrying amount of the Preferred Stock has not been adjusted.

Conversion

Each share of Preferred Stock is convertible at the option of the holder into a number of fully paid shares of Common Stock as determined by dividing $0.70 by the conversion price in effect at the time for the Series A Preferred Stock and by dividing $0.9503 by the conversion price in effect at the time for the Series B Preferred Stock. The initial conversion prices of Series A and Series B Preferred Stock are $0.70 per share and $0.9503 per share, respectively, and are subject to adjustment in accordance with anti-dilution provisions contained in the Company's certificate of incorporation. Conversion is automatic immediately upon the closing of a firm commitment underwritten public offering in which the public offering price equals or exceeds $1.90 per share and the gross proceeds are not less than $50,000,000, or upon the written consent of the holders of at least 60% of the then-outstanding shares of Preferred Stock.

10. Common Stock

The voting, dividend and liquidation rights of holders of Common Stock are subject to and qualified by the rights, powers and preferences of the holders of Preferred Stock. The Company's Common Stock has the following characteristics:

Voting

The holders of Common Stock are entitled to one vote for each share of Common Stock held at all meetings of stockholders and written actions in lieu of meetings.

Dividends

The holders of Common Stock are entitled to receive dividends, if and when declared by the board of directors. Cash dividends may not be declared or paid to holders of Common Stock until paid on each series of outstanding Preferred Stock in accordance with their respective terms. As of September 30, 2014, no dividends have been declared or paid since the Company's inception.

Liquidation

After payment to the holders of Preferred Stock of their liquidation preferences, the holders of Common Stock are entitled to share ratably in the Company's assets available for distribution to stockholders, in the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company or upon the occurrence of a deemed liquidation event, as defined in the Company's certificate of incorporation.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

10. Common Stock (Continued)

Reserved for Future Issuance

The Company had reserved for future issuance the following number of shares of Common Stock as of December 31, 2012, December 31, 2013 and September 30, 2014:

	December 31,		September 30,
	2012	2013	2014
Conversion of Series A Preferred Stock	55,700,752	68,837,703	68,837,703
Conversion of Series B Preferred Stock	—	37,830,473	37,830,473
Warrants for the purchase of Preferred Stock	—	—	157,844
Warrants for the purchase of Common Stock	447,850	447,850	447,850
Options to purchase Common Stock	12,707,552	19,075,611	18,404,379
	68,856,154	126,191,637	125,678,249

11. Warrants

On August 27, 2014, the Company issued the 2014 Warrants to purchase 157,844 shares of Series B Preferred Stock at an exercise price of $0.9503 per share to the lenders in connection with the Credit Facility (Note 7). The 2014 Warrants were exercisable immediately and have a seven-year life. The fair value of the 2014 Warrants is re-measured at each reporting date using then-current assumptions. The 2014 Warrants were valued using the Black-Scholes option-pricing model. The following assumptions were used in valuing the 2014 Warrants:

	August 27, 2014	September 30, 2014
Risk-free interest rate	2.05%	2.22%
Expected dividend yield	0.00%	0.00%
Expected term (in years)	7.0	7.0
Expected volatility	80.52%	80.60%

The following table provides a roll-forward of the fair value of the 2014 Warrants determined by Level 3 inputs (in thousands):

	Fair Value
Balance at January 1, 2014	$ —
Issuance of warrants at fair value	110
Change in fair value, recorded as a component of interest expense	—
Balance at September 30, 2014	$ 110

No portion of the 2014 Warrants had been exercised as of September 30, 2014.

At various dates from 2008 through 2010, the Company issued warrants to purchase shares of Common Stock at an exercise price of $0.13 to various individuals, including its founders and employees of the Company. The warrants have a six-year term.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

12. Stock Incentive Plan

The Company maintains the 2008 Stock Incentive Plan (the "Plan") for employees, directors, consultants and advisors to the Company. The Plan provides for the grant of incentive and non-qualified stock options and restricted stock grants as determined by the Company's board of directors. As of December 31, 2013 and September 30, 2014, the Company had reserved 21,838,299 shares of Common Stock under the Plan, of which 2,803,542 shares remained available for future issuance as of September 30, 2014. Under the Plan, stock options may not be granted with exercise prices at less than fair value on the date of the grant.

Terms of stock option agreements, including vesting requirements, are determined by the Company's board of directors, subject to the provisions of the Plan. Options and restricted stock awards granted by the Company generally vest ratably over four years, with a one-year cliff, and options are exercisable from the date of grant for a period of ten years. Restricted stock issuances and early exercises of stock options are subject to a Company right of repurchase at the original issuance price, which right lapses over the vesting period of the stock. For options and restricted stock awards granted through September 30, 2014, the exercise price or purchase price, as applicable, equaled the estimated fair value of the Common Stock as determined by the Company's board of directors on the date of grant.

A summary of the Company's stock option activity and related information follows:

	Number of Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Instrinsic Value (in thousands)
Outstanding at December 31, 2012	9,235,559	$ 0.15	8.43	$ 342
Granted	2,000,373	0.18		
Exercised	(243,810)	0.11		
Forfeited	(108,879)	0.17		
Outstanding at December 31, 2013	10,883,243	$ 0.15	8.05	$ 4,099
Granted	6,308,500	0.53		
Exercised	(680,232)	0.16		
Forfeited	(901,674)	0.29		
Outstanding at September 30, 2014	15,609,837	$ 0.30	8.18	$ 4,697
Exercisable at December 31, 2013	5,171,782	$ 0.14	7.28	$ 2,043
Vested and expected to vest at December 31, 2013	10,849,750	$ 0.15	8.05	$ 3,841
Exercisable at September 30, 2014	6,636,408	$ 0.14	7.00	$ 3,027
Vested and expected to vest at September 30, 2014	14,321,272	$ 0.29	8.08	$ 4,510

The total intrinsic value of options exercised for the year ended December 31, 2012 and 2013 and for the nine months ended September 30, 2013 and September 30, 2014 was $10,000, $0.1 million,

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

12. Stock Incentive Plan (Continued)

$0.1 million and $0.3 million, respectively. The total fair value of employee options vested for the year ended December 31, 2012 and 2013 and for the nine months ended September 30, 2013 and September 30, 2014 was $0.2 million, $0.3 million, $0.2 million and $0.3 million, respectively.

At December 31, 2013 and September 30, 2014, the total unrecognized compensation expense related to unvested stock option awards, including estimated forfeitures, was $2.5 million and $2.3 million, respectively. The Company expects to recognize that cost over a weighted-average period of approximately 1.6 years and 3.1 years, respectively.

Stock-Based Compensation Expense

The weighted-average grant date fair value of options granted to employees and directors for the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2013 and 2014 was $0.12, $0.13, $0.13 and $0.38, respectively. The fair value of stock options granted to employees and non-employees was estimated using the Black-Scholes option-pricing model based on the assumptions noted in the following table:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
Risk-free interest rate	1.02 - 1.10%	0.92 - 2.03%	0.92 - 2.03%	1.87 - 2.45%
Expected dividend yield	—	—	—	—
Expected term (in years)	6.25 - 10.0	6.25 - 10.0	6.25 - 10.0	6.25 - 10.0
Expected volatility	80.8 - 81.2%	75.0 - 81.5%	75.0 - 81.5%	76.0 - 81.6%

Volatility

Since the Company is privately held as of the date of these financial statements, it does not have relevant historical data to support its expected volatility. As such, the Company has used a weighted-average of expected volatility based on the volatilities of a representative group of publicly traded biopharmaceutical companies. For purposes of identifying representative companies, the Company considered characteristics such as number of product candidates in early stages of product development, area of therapeutic focus, length of trading history, similar vesting provisions and a similar percentage of stock options that were in-the-money. The expected volatility was determined using a weighted-average of the historical volatilities of the representative group of companies for a period equal to the expected term of the option grant. The Company intends to continue to consistently apply this process using the same representative companies until a sufficient amount of historical information regarding the volatility of the Company's own share price becomes available or until circumstances change, such that the identified entities are no longer representative companies. In the latter case, more suitable, similar entities whose share prices are publicly available would be utilized in the calculation.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

12. Stock Incentive Plan (Continued)

Risk-Free Rate

The risk-free rate was based on the yield curve of U.S. Treasury securities with periods commensurate with the expected term of the options being valued.

Expected Term

The Company uses the "simplified method" to estimate the expected term of stock option grants. Under this approach, the weighted-average expected life is presumed to be the average of the contractual term (ten years) and the vesting term (generally four years) of the Company's stock options, taking into consideration multiple vesting tranches. The Company utilizes this method due to lack of historical exercise data and the plain-vanilla nature of the Company's share-based awards.

Dividends

The Company has never paid, and does not anticipate paying in the foreseeable future, any cash dividends and therefore uses an expected dividend yield of zero in the option-pricing model.

Forfeitures

The Company is also required to estimate forfeitures at the time of grant, and revise those estimates in subsequent periods if actual forfeitures differ from its estimates. The Company uses historical data to estimate pre-vesting option forfeitures and record stock-based compensation expense only for those awards that are expected to vest. To the extent that actual forfeitures differ from the Company's estimates, the difference is recorded as a cumulative adjustment in the period the estimates are revised.

13. Income Taxes

A reconciliation of the U.S. statutory income tax rate to the Company's effective tax rate is as follows for the years ended December 31, 2012 and 2013:

	Year Ended December 31,	
	2012	2013
Federal income tax (benefit) at statutory rate	34.00%	34.00%
Permanent differences	(0.37)	(0.50)
Federal research and development credits and adjustments	—	5.80
State income tax, net of federal benefit	6.09	5.88
Other	(0.17)	(0.01)
Change in valuation allowance	(39.55)	(45.17)
Effective income tax rate	0.00%	0.00%

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

13. Income Taxes (Continued)

The provision (benefit) for income taxes was as follows for the years ended December 31, 2012 and 2013 (in thousands):

	Year Ended December 31,	
	2012	2013
Current:		
Federal	$ —	$ —
State	—	—
Total current	—	—
Deferred:		
Federal	—	—
State	—	—
Total deferred	—	—
Total	$ —	$ —

The Company's deferred tax assets consisted of the following (in thousands):

	December 31,	
	2012	2013
Deferred tax assets		
Net operating loss carryforwards	$ 6,623	$ 10,982
Tax credit carryforwards	770	1,955
Capitalized research and development	6,165	8,521
Capitalized legal expenses	668	883
Other differences	81	145
Total deferred tax assets	14,307	22,486
Valuation allowance	(14,307)	(22,486)
Net deferred tax assets	$ —	$ —

The Company recorded an increase to the valuation allowance of $6.2 million during the year ended December 31, 2012 and $8.2 million during the year ended December 31, 2013, due primarily to an increase in the net operating loss carryforwards and tax credits.

Catabasis Pharmaceuticals, Inc.

Notes to Financial Statements (Continued)

Information as of September 30, 2014 and for the nine months ended September 30, 2013 and 2014 is unaudited

13. Income Taxes (Continued)

In assessing the realizability of deferred tax assets, the Company considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which the temporary differences representing net future deductible amounts become deductible. Due to the Company's history of losses, the deferred tax assets were fully offset by a valuation allowance at December 31, 2012 and 2013.

As of December 31, 2013, the Company had approximately $28.1 million of federal and $27.4 million of state net operating loss carryforwards to offset future taxable income, if any. Such net operating loss carryforwards expire at varying times through the year 2033, if not utilized. The Company also had approximately $1.5 million of federal and $0.4 million of state tax credit carryforwards available to reduce future tax liabilities as of December 31, 2013.

The Internal Revenue Code of 1986, as amended (the "Code"), provides for a limitation of the annual use of net operating losses and other tax attributes (such as research and development tax credit carryforwards) following certain ownership changes (as defined by the Code) that could limit the Company's ability to utilize these carryforwards. At this time, the Company has not completed a study to assess whether an ownership change under Section 382 of the Code has occurred, or whether there have been multiple ownership changes since the Company's formation, due to the costs and complexities associated with such a study. The Company may have experienced various ownership changes, as defined by the Code, as a result of past financing transactions. Accordingly, the Company's ability to utilize the aforementioned carryforwards may be limited. Additionally, U.S. tax laws limit the time during which these carryforwards may be applied against future taxes. Therefore, the Company may not be able to take full advantage of these carryforwards for federal or state income tax purposes.

The Company does not have any significant unrecognized tax benefits.

As of December 31, 2013, the Company had not accrued interest or penalties related to uncertain tax positions. The Company's tax returns for the years ended December 31, 2008 through December 31, 2013 are still subject to examination by major tax jurisdictions.

14. Defined Contribution Benefit Plan

The Company sponsors a 401(k) retirement plan, in which substantially all of its full-time employees are eligible to participate. Participants may contribute a percentage of their annual compensation to this plan, subject to statutory limitations. The Company did not provide any contributions to this plan during the years ended December 31, 2012 and 2013 or the nine months ended September 30, 2013 and 2014.

15. Subsequent Events

The Company has completed an evaluation of all subsequent events through the date this registration statement on Form S-1 was confidentially submitted to the SEC, to ensure that this submission includes appropriate disclosure of events both recognized in the financial statements as of September 30, 2014, and events which occurred subsequently but were not recognized in the financial statements. The Company has concluded that no subsequent event has occurred that requires disclosure.

Shares

Catabasis Pharmaceuticals, Inc.

Common Stock

PRELIMINARY PROSPECTUS
, 2015

Citigroup

Cowen and Company

Oppenheimer & Co.

Wedbush PacGrow Life Sciences

Through and including , 2015 (25 days after the commencement of this offering), all dealers that buy, sell or trade shares of our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the expenses to be incurred in connection with the offering described in this Registration Statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimates except the Securities and Exchange Commission's registration fee, the Financial Industry Regulatory Authority, Inc. filing fee and the NASDAQ listing fee.

	Amount
Securities and Exchange Commission registration fee	$ *
Financial Industry Regulatory Authority, Inc. filing fee	*
NASDAQ listing fee	*
Accountants' fees and expenses	*
Legal fees and expenses	*
Blue Sky fees and expenses	*
Transfer Agent's fees and expenses	*
Printing and engraving expenses	*
Miscellaneous fees and expenses	*
Total expenses	$ *

* To be filed by amendment.

Item 14. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of its directors or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Upon completion of this offering, our certificate of incorporation will provide that none of our directors shall be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Upon the completion of this offering, our certificate of incorporation will provide that we will indemnify each person who was or is a party or threatened to be made a party or is involved in to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, our director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our certificate of incorporation that will be effective upon the closing of the offering also provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, our director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred by him or her or on his or her behalf in connection therewith. If we do not assume the defense, expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with our directors and executive officers. In general, these agreements provide that we will indemnify the director or executive officer to the fullest extent permitted by law for claims arising in his or her capacity as a director or officer of our company or in connection with their service at our request for another corporation or entity. The indemnification agreements also provide for procedures that will apply in the event that a director or executive officer makes a claim for indemnification and establish certain presumptions that are favorable to the director or executive officer.

We maintain a general liability insurance policy that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

The underwriting agreement we will enter into in connection with the offering of common stock being registered hereby provides that the underwriters will indemnify, under certain conditions, our directors and officers (as well as certain other persons) against certain liabilities arising in connection with such offering.

Insofar as the forgoing provisions permit indemnification of directors, executive officers, or persons controlling us for liability arising under the Securities Act of 1933, as amended, or the Securities Act, we have been informed that, in the opinion of the Securities and Exchange Commission, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding shares of our common stock and shares of our preferred stock, and stock options and warrants granted, by us within the past three years that were not registered under the Securities Act of 1933, as amended, or the Securities Act. Included is the consideration, if any, we received for such shares and options and warrants and information relating to the section of the Securities Act, or rule of the Securities and Exchange Commission, under which exemption from registration was claimed.

(a) Issuance of shares of preferred stock

In July 2012, we issued and sold an aggregate of 12,500,000 shares of our Series A preferred stock to five investors at a price per share of $0.70, for an aggregate purchase price of $8,750,000.

In January 2013, we issued and sold an aggregate of 12,499,999 shares of our Series A preferred stock to five investors at a price per share of $0.70, for an aggregate purchase price of $8,749,999.

In June 2013, we issued and sold an aggregate 636,952 shares of our Series A preferred stock to nine investors at a price per share of $0.70, for an aggregate purchase price of $445,866.

In October 2013, we issued and sold an aggregate of 34,129,571 shares of our Series B preferred stock to eleven investors at a price per share of $0.9503, for an aggregate purchase price of $32,433,331.

No underwriters were involved in the foregoing issuances of securities. The securities described in this section (a) of Item 15 were issued to investors in reliance upon the exemption from the registration requirements of the Securities Act, as set forth in Section 4(a)(2) under the Securities Act and Regulation D promulgated thereunder relative to transactions by an issuer not involving any public offering, to the extent an exemption from such registration was required. The recipients of securities in the transactions described above represented that they were accredited investors and were acquiring the securities for their own account for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time and appropriate legends were affixed to the instruments representing such securities issued in such transactions.

(b) Stock option grants and option exercises

Between January 23, 2012 and January 23, 2015, we granted options to purchase an aggregate of 13,418,010 shares of common stock, with exercise prices ranging from $0.15 to $0.56 per share, to employees, directors and consultants pursuant to our 2008 equity incentive plan. Between January 23, 2012 and January 23, 2015, we issued an aggregate of 1,712,128 shares of common stock upon the exercise of options for aggregate consideration of $167,126.

No underwriters were involved in the foregoing issuances of securities. The issuances of stock options and the shares of our common stock issued upon the exercise of the options described in this paragraph (b) of Item 15 were issued pursuant to written compensatory plans or arrangements with our employees, directors and consultants, in reliance on the exemption provided by Rule 701 promulgated under the Securities Act, or pursuant to Section 4(a)(2) under the Securities Act, relative to transactions by an issuer not involving any public offering, to the extent an exemption from such registration was required. All recipients either received adequate information about us or had access, through employment or other relationships, to such information.

(c) Warrant grants

On August 27, 2014, we issued warrants to purchase an aggregate of 157,844 shares of Series B preferred stock at a price of $0.9503 per share to Square 1 Bank and MidCap Financial SBIC, LP.

No underwriters were involved in the foregoing issuances of securities. The issuances of warrants described in this paragraph (c) of Item 15 were issued to investors in reliance upon the exemption from the registration requirements of the Securities Act, as set forth in Section 4(2) under the Securities Act relative to transactions by an issuer not involving any public offering, to the extent an exemption from such registration was required. The recipients of securities in the transactions described above represented that they were accredited investors and were acquiring the securities for their own account for investment purposes only and not with a view to the public resale or distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time and appropriate legends were affixed to the instruments representing such securities issued in such transactions.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

The exhibits to the registration statement are listed in the Exhibit Index attached hereto and incorporated by reference herein.

(b) Financial Statement Schedules.

No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or notes.

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

(b) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(c) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on this day of , 2015.

CATABASIS PHARMACEUTICALS, INC.

By: _____

Jill C. Milne, Ph.D.
President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Catabasis Pharmaceuticals, Inc., hereby severally constitute and appoint Jill C. Milne and Ian C. Sanderson, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities held on the dates indicated.

Signature	Title	Date
Jill C. Milne, Ph.D.	President, Chief Executive Officer and Director (principal executive officer)	, 2015
Ian C. Sanderson	Chief Financial Officer and Treasurer (principal financial and principal accounting officer)	, 2015
Michael Ross, Ph.D.	Chairman of the Board of Directors	, 2015
Nicholas Galakatos, Ph.D.	Director	, 2015
Jean George	Director	, 2015
Ron Laufer, M.D.	Director	, 2015
Kenneth Bate	Director	, 2015

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
1.1*	Form of Underwriting Agreement
3.1	Second Amended and Restated Certificate of Incorporation of the Registrant
3.2	Bylaws of the Registrant
3.3*	Form of Restated Certificate of Incorporation of the Registrant (to be effective upon the closing of this offering)
3.4*	Form of Amended and Restated Bylaws of the Registrant (to be effective upon the closing of this offering)
4.1*	Specimen stock certificate evidencing the shares of common stock
5.1*	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP
10.1	Amended and Restated Investor Rights Agreement, dated as of October 31, 2013, among the Registrant and the other parties thereto
10.2	Warrant to purchase shares of Series B Preferred Stock issued by the Registrant to Square 1 Bank
10.3	Warrant to purchase shares of Series B Preferred Stock issued by the Registrant to Midcap Financial SBIC, L.P.
10.4	Amended and Restated 2008 Equity Incentive Plan, as amended
10.5	Form of Incentive Stock Option Agreement under Amended and Restated 2008 Equity Incentive Plan
10.6	Form of Nonstatutory Stock Option Agreement under Amended and Restated 2008 Equity Incentive Plan
10.7*	2015 Stock Incentive Plan
10.8*	Form of Incentive Stock Option Agreement under 2015 Stock Incentive Plan
10.9*	Form of Nonstatutory Stock Option Agreement under 2015 Stock Incentive Plan
10.10*	Amended and Restated Employment Agreement, dated as of April 7, 2010, by and between the Registrant and Jill C. Milne, as amended
10.11*	Amended and Restated Employment Agreement, dated as of April 7, 2010, by and between the Registrant and Michael Jirousek
10.12*	Offer Letter, dated as of October 21, 2013, by and between the Registrant and Ian C. Sanderson
10.13	Form of Director and Officer Indemnification Agreement by and between the Registrant and each of Jill C. Milne, Ian C. Sanderson, Michael Jirousek, Joanne M. Donovan, Michael Ross, Nicholas Galakatos, Jean George, Ron Laufer and Kenneth Bate
10.14	Credit and Security Agreement, dated as of August 27, 2014, by and among the Registrant, Midcap Financial SBIC, L.P., Square 1 Bank and the other lenders identified therein
10.15	Indenture of Lease, dated as of December 17, 2010, by and between the Registrant and RB Kendall Fee, LLC, as amended
10.16*	Summary of Director Compensation Program
10.17*	Form of Common Stock Warrant

Exhibit Number	Description of Exhibit
23.1*	Consent of Ernst & Young LLP, independent registered public accounting firm.
23.2*	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included on signature page)

* To be filed by amendment.

SECOND AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
CATABASIS PHARMACEUTICALS, INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

Catabasis Pharmaceuticals, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "General Corporation Law"),

DOES HEREBY CERTIFY:

1. That the name of this corporation is Catabasis Pharmaceuticals, Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law on June 26, 2008.

2. That the Board of Directors duly adopted resolutions proposing to amend and restate the Amended and Restated Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Amended and Restated Certificate of Incorporation of this corporation be amended and restated (as amended and restated, the "Certificate of Incorporation") in its entirety to read as follows:

FIRST: The name of this corporation is Catabasis Pharmaceuticals, Inc. (the "Corporation").

SECOND: The address of the registered office of the Corporation in the State of Delaware is 1209 Orange Street, in the City of Wilmington, County of New Castle, 19801. The name of its registered agent at such address is The Corporation Trust Company.

THIRD: The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

FOURTH: The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 132,000,000 shares of Common Stock, $0.001 par value per share ("Common Stock"), and (ii) 106,668,176 shares of Preferred Stock, $0.001 par value per share ("Preferred Stock").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock set forth herein.

2. Voting. The holders of the Common Stock are entitled to one vote for each share of Common Stock held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by (in addition to any vote of the holders of one or more series of Preferred Stock that may be required by the terms of the Certificate of Incorporation) the affirmative vote of the holders of shares of capital stock of the Corporation representing a majority of the votes represented by all outstanding shares of capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

B. PREFERRED STOCK

68,837,703 shares of the authorized Preferred Stock of the Corporation are hereby designated "Series A Preferred Stock" and 37,830,473 shares of the authorized Preferred Stock are hereby designated "Series B Preferred Stock." The Series A Preferred Stock and Series B Preferred Stock shall have the rights, preferences, powers, privileges and restrictions, qualifications and limitations set forth herein. Unless otherwise indicated, references to "Sections" or "Subsections" in this Part B of this Article Fourth refer to sections and subsections of Part B of this Article Fourth.

1. Dividends. The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation (other than dividends on shares of Common Stock payable in shares of Common Stock) unless (in addition to the obtaining of any consents required elsewhere in the Certificate of Incorporation) the holders of the Series A Preferred Stock and Series B Preferred Stock then outstanding shall first receive, or simultaneously receive, on a pari passu basis, a dividend on each outstanding share of such series of Preferred Stock in an amount at least equal to the greater of (i) (A) with respect to the Series A Preferred Stock, $0.056 per share of Series A Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization affecting such shares) per year from and after the date of the issuance of any shares of Series A Preferred Stock (to the extent not previously paid) and (B) with respect to the Series B Preferred Stock, $0.076 per share of Series B Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization affecting such shares) per year from and after the date of the issuance of any shares of Series B Preferred Stock (to the extent not previously paid) and (ii)(A) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of each series of Preferred Stock as would equal the product of (1) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into Common Stock and (2) the number of shares of Common Stock issuable upon conversion of a share of such series of Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (B) in the case of a dividend on

any class or series that is not convertible into Common Stock, at a rate per share of such series of Preferred Stock determined by (1) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization affecting such shares) and (2) multiplying such fraction by an amount equal to the Series A Original Issue Price (as defined below) or Series B Original Issue Price (as defined below), as applicable; provided that, if the Corporation declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Corporation, the dividend payable to the holders of a series of Preferred Stock pursuant to this Section 1 shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest dividend for such series. The foregoing dividend shall not be cumulative.

2. Liquidation, Dissolution or Winding Up; Certain Mergers, Consolidations and Asset Sales.

2.1 Payments to Holders of Preferred Stock. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, the holders of shares of Series A Preferred Stock and Series B Preferred Stock then outstanding, on a pari passu basis, shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the greater of (i) the Series A Original Issue Price, in the case of the Series A Preferred Stock, and the Series B Original Issue Price, in the case of the Series B Preferred Stock, plus any dividends declared but unpaid thereon or (ii) such amount per share as would have been payable had each share of each series of Preferred Stock that would receive a greater amount upon conversion into Common Stock than pursuant to clause (i) above then converted into Common Stock pursuant to Section 4 immediately prior to such liquidation, dissolution or winding up. If upon any such liquidation, dissolution or winding up of the Corporation, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Preferred Stock the full amount to which they shall be entitled under this Subsection 2.1, the holders of shares of Preferred Stock shall share ratably in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full. The amounts payable to the holders of Series A Preferred Stock and Series B Preferred Stock pursuant to this Section 2.1 are hereinafter referred to as the "Series A Liquidation Amount" and the "Series B Liquidation Amount," respectively. The "Series A Original Issue Price" shall mean $0.70 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A Preferred Stock. The "Series B Original Issue Price" shall mean $0.9503 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock.

2.2 Payments to Holders of Common Stock. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, after the payment of all preferential amounts required to be paid to the holders of shares of Preferred Stock, the remaining assets of the Corporation available for distribution to its stockholders shall be

distributed among the holders of shares of Common Stock, pro rata based on the number of shares held by each such holder.

2.3 Deemed Liquidation Events.

2.3.1 Definition. Each of the following events shall be considered a "Deemed Liquidation Event" unless the holders of (x) at least sixty percent (60%) of the outstanding shares of Series A Preferred Stock, voting as a separate series (the "Series A Requisite Holders"), and (y) at least sixty-six and two-thirds percent (66 2/3%) of the outstanding shares of Series B Preferred Stock, voting as a separate series (the "Series B Requisite Holders"), elect otherwise by written notice sent to the Corporation at least 20 days prior to the effective date of any such event:

(a) a merger or consolidation in which

(i) the Corporation is a constituent party or

(ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation,

except any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, a majority, by voting power, of the capital stock of (1) the surviving or resulting corporation or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation (*provided* that, for the purpose of this Subsection 2.3.1, all shares of Common Stock issuable upon exercise of Options (as defined below) outstanding immediately prior to such merger or consolidation or upon conversion of Convertible Securities (as defined below) outstanding immediately prior to such merger or consolidation shall be deemed to be outstanding immediately prior to such merger or consolidation and, if applicable, converted or exchanged in such merger or consolidation on the same terms as the actual outstanding shares of Common Stock are converted or exchanged); or

(b) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all of the assets of the Corporation and its subsidiaries taken as a whole, or the sale or disposition (whether by merger or otherwise) of one or more subsidiaries of the Corporation if all or substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly-owned subsidiary of the Corporation.

2.3.2 Effecting a Deemed Liquidation Event.

(a) The Corporation shall not have the power to effect a Deemed Liquidation Event referred to in Subsection 2.3.1(a)(i) unless the agreement or plan of merger or consolidation for such transaction (the "Merger Agreement") provides that the consideration payable to the

stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 as if such Deemed Liquidation Event constituted a liquidation, dissolution or winding up of the Corporation.

(b) In the event of a Deemed Liquidation Event referred to in Subsection 2.3.1(a)(ii) or 2.3.1(b), if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within 90 days after such Deemed Liquidation Event, then (i) the Corporation shall send a written notice to each holder of Preferred Stock no later than the 90th day after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (ii) to require the redemption of such shares of Preferred Stock, and (ii) if the holders of at least 60% of the outstanding shares of Preferred Stock, voting together as a single class on an as-converted basis (the "Requisite Holders") so request in a written instrument delivered to the Corporation not later than 120 days after such Deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by the Board of Directors of the Corporation), together with any other assets of the Corporation available for distribution to its stockholders (the "Available Proceeds"), to the extent legally available therefor, on or before the 150th day after such Deemed Liquidation Event, to redeem all outstanding shares of Preferred Stock, on a pari passu basis, at a price per share equal to (a) the Series A Liquidation Amount, in the case of Series A Preferred Stock, or (b) the Series B Liquidation Amount, in the case of Series B Preferred Stock. Notwithstanding the foregoing, in the event of a redemption pursuant to the preceding sentence, if the Available Proceeds are not sufficient to redeem all outstanding shares of Preferred Stock, the Corporation shall redeem a pro rata portion of each holder's shares of Preferred Stock to the fullest extent of such Available Proceeds, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the Available Proceeds were sufficient to redeem all such shares, and shall redeem the remaining shares to have been redeemed as soon as practicable after the Corporation has funds legally available therefor. Prior to any redemption provided for in this Subsection 2.3.2(b), upon the Requisite Holders requesting redemption of their shares pursuant to a written instrument delivered to the Corporation pursuant to Subsection 2.3.2(b)(ii), the Corporation shall send a written notice to each holder of record of Series A Preferred Stock and Series B Preferred Stock stating the Series A Liquidation Amount, in the case of Series A Preferred Stock, or Series B Liquidation Amount, in the case of Series B Preferred Stock, the date that such redemption will occur, which date shall be not less than 20 days after the date of such written notice, and that the holder is to surrender to the Corporation, in the manner and at the place designated, his, her or its certificate or certificates representing the shares of Preferred Stock. On or before the date of redemption pursuant to this Subsection 2.3.2(b), each holder of shares of Preferred Stock shall surrender the certificate or certificates representing such shares (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation in the manner and at the

place as designated in the written notice sent by the Corporation, and thereupon the Series A Liquidation Amount, in the case of Series A Preferred Stock, or the Series B Liquidation Amount, in the case of Series B Preferred Stock, for such shares shall be payable to the order of the person whose name appears on such certificate or certificates as the owner thereof. After the date that the Series A Liquidation Amount, in the case of Series A Preferred Stock, or the Series B Liquidation Amount, in the case of Series B Preferred Stock, is paid or tendered for payment or deposited with an independent payment agent so as to be available therefor in a timely manner, then notwithstanding that the certificates evidencing any of the shares of Preferred Stock shall not have been surrendered, all rights with respect to such shares shall terminate, except only the right of the holders to receive the Series A Liquidation Amount, in the case of Series A Preferred Stock, or the Series B Liquidation Amount, in the case of Series B Preferred Stock, upon surrender of their certificate or certificates therefor. Prior to the distribution or redemption provided for in this Subsection 2.3.2(b), the Corporation shall not expend or dissipate the consideration received for such Deemed Liquidation Event, except to discharge expenses incurred in connection with such Deemed Liquidation Event or in the ordinary course of business.

2.3.3 Amount Deemed Paid or Distributed. If the amount deemed paid or distributed under this Subsection 2.3.3 is made in property other than in cash, the value of such distribution shall be the fair market value of such property, determined as follows:

(a) For securities not subject to investment letters or other similar restrictions on free marketability,

(i) if traded on a securities exchange, the value shall be deemed to be the average of the closing prices of the securities on such exchange or market over the 30-period ending three days prior to the closing of such transaction;

(ii) if actively traded over-the-counter, the value shall be deemed to be the average of the closing bid prices over the 30-day period ending three days prior to the closing of such transaction; or

(iii) if there is no active public market, the value shall be the fair market value thereof, as determined in good faith by the Board of Directors of the Corporation.

(b) The method of valuation of securities subject to investment letters or other similar restrictions on free marketability (other than restrictions arising solely by virtue of a stockholder's status as an affiliate or former affiliate) shall take into account an appropriate discount (as determined in good faith by the Board of Directors of the Corporation) from the market value as determined pursuant to clause (a) above so as to reflect the approximate fair market value thereof.

(c) Allocation of Escrow. In the event of a Deemed Liquidation Event pursuant to Subsection 2.3.1(a)(i), if any portion of the consideration payable to the stockholders of the Corporation is placed into escrow and/or is payable to the stockholders of the Corporation subject to contingencies, the Merger Agreement shall provide that (a) the portion of such consideration that is not placed in escrow and not subject to any contingencies (the "Initial Consideration") shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event and (b) any additional consideration which becomes payable to the stockholders of the Corporation upon release from escrow or satisfaction of contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 after taking into account the previous payment of the Initial Consideration as part of the same transaction.

3. Voting.

3.1 General. On any matter presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the Certificate of Incorporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

3.2 Election of Directors.

3.2.1 The holders of record of the shares of Series A Preferred Stock, exclusively and as a separate class, shall be entitled to elect three directors of the Corporation (the "Series A Directors"). Any director elected as provided in the preceding sentence may be removed without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. If the holders of shares of Series A Preferred Stock fail to elect a sufficient number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Subsection 3.2.1, then any directorship not so filled shall remain vacant until such time as the holders of the Series A Preferred Stock elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than the holders of the Series A Preferred Stock, voting exclusively and as a separate class.

3.2.2 The holders of record of the shares of Series B Preferred Stock, exclusively and as a separate class, shall be entitled to elect one director of the Corporation (the "Series B Director"). Any director elected as provided in the preceding sentence may be removed without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders. If the holders of shares of Series B Preferred Stock fail to elect a director to fill

such directorship, voting exclusively and as a separate class, pursuant to the first sentence of this Subsection 3.2.2, then such directorship shall remain vacant until such time as the holders of the Series B Preferred Stock elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than the holders of the Series B Preferred Stock, voting exclusively and as a separate class (except that prior to the time the first share of Series B Preferred Stock is issued, the vacancy in the office of the Series B Director may be filled (either contingently or otherwise) by a majority of the directors then in office).

3.2.3 The holders of record of the shares of Common Stock and Preferred Stock, exclusively and voting together as a single class on an as-converted to Common Stock basis, shall be entitled to elect the balance of the total number of directors of the Corporation. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director. Except as otherwise provided in this Subsection 3.2, a vacancy in any directorship filled by the holders of any class or series shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or series or by any remaining director or directors elected by the holders of such class or series pursuant to this Subsection 3.2.

3.2.4 The rights of the holders of the Series A Preferred Stock under Subsection 3.2.1 shall terminate on the first date following the Series B Original Issue Date (as defined below) on which there are issued and outstanding less than 1,000,000 shares of Series A Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A Preferred Stock). The rights of the holders of the Series B Preferred Stock under Subsection 3.2.2 shall terminate on the first date following the Series B Original Issue Date on which there are issued and outstanding less than 1,000,000 shares of Series B Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock).

3.3 Preferred Stock Protective Provisions. At any time when at least 1,000,000 shares of Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Preferred Stock) are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or the Certificate of Incorporation) the written consent or affirmative vote of the Requisite Holders, given in writing or by vote at a meeting, and any such act or transaction entered into without such consent or vote shall be null and void ab initio, and of no force or effect:

(a) liquidate, dissolve or wind-up the business and affairs of the Corporation, effect any Deemed Liquidation Event, or consent to any of the foregoing;

(b) increase or decrease the number of shares of Common Stock or any series of Preferred Stock that the Corporation shall have the authority to issue pursuant to its Certificate of Incorporation;

(c) amend, alter, waive or repeal any provision of the Certificate of Incorporation or Bylaws of the Corporation in a manner that adversely affects the rights, preferences or privileges of the Preferred Stock;

(d) create, or authorize the creation of, or issue or obligate itself to issue shares of, any additional class or series of capital stock unless the same ranks junior to the Preferred Stock with respect to the distribution of assets on the liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event, the payment of dividends and rights of redemption;

(e) (i) reclassify, alter or amend any existing security of the Corporation that is *pari passu* with the Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to the Preferred Stock in respect of any such right, preference or privilege, or (ii) reclassify, alter or amend any existing security of the Corporation that is junior to the Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to or *pari passu* with the Preferred Stock in respect of any such right, preference or privilege;

(f) purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Preferred Stock as expressly authorized herein and (ii) repurchases of stock from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at the lower of the original purchase price or the then-current fair market value thereof;

(g) increase or decrease the authorized number of directors constituting the Board of Directors of the Corporation;

(h) establish any new employee stock option plan, employee stock purchase plan, employee restricted stock plan or other similar equity incentive plan or arrangement or increase the number of shares of capital stock of the Corporation reserved for issuance under any such plan or arrangement;

(i) effect any material change in the Corporation's lines of business or business model; or

(j) create, or authorize the creation of, or issue, or authorize the issuance of any debt security or instrument or otherwise incur any indebtedness if the Corporation's aggregate indebtedness thereafter would exceed $1,000,000.

3.4 Series A Preferred Stock Protective Provisions. For so long as at least 1,000,000 shares of Series A Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the

Series A Preferred Stock) are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, without (in addition to any other vote required by law or the Certificate of Incorporation) the written consent or affirmative vote of the Series A Requisite Holders, given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as a class, (a) amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws if such amendment, alteration or repeal adversely affects the rights, preferences or privileges of the Series A Preferred Stock in a manner that is disproportionate to the effect of the same on the rights, preferences or privileges of any other class or series of capital stock or (b) purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Preferred Stock as expressly authorized herein and (ii) repurchases of stock from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at the lower of the original purchase price or the then-current fair market value thereof, and any such act or transaction entered into without such consent or vote shall be null and void ab initio, and of no force or effect. For clarity, the issuance and sale by the Corporation in connection with a bona fide capital raising transaction of a new series of capital stock with powers, preferences or rights senior to or on parity with the Series A Preferred Stock shall not, in and of itself, be deemed to be an alteration or change requiring the consent of the Series A Requisite Holders pursuant to clause (a) in the preceding sentence of this Subsection 3.4.

3.5 Series B Preferred Stock Protective Provisions. For so long as at least 1,000,000 shares of Series B Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock) are outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, without (in addition to any other vote required by law or the Certificate of Incorporation) the written consent or affirmative vote of the Series B Requisite Holders, given in writing or by vote at a meeting, consenting or voting (as the case may be) separately as a class, (a) amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws if such amendment, alteration or repeal adversely affects the rights, preferences or privileges of the Series B Preferred Stock in a manner that is disproportionate to the effect of the same on the rights, preferences or privileges of any other class or series of capital stock or (b) purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Preferred Stock as expressly authorized herein and (ii) repurchases of stock from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at the lower of the original purchase price or the then-current fair market value thereof, and any such act or transaction entered into without such consent or vote shall be null and void ab initio, and of no force or effect. For clarity, the issuance and sale by the Corporation in connection with a bona fide capital raising transaction of a new series of capital stock with powers, preferences or rights senior to or on parity with the Series B Preferred Stock shall not, in and of itself, be deemed to be an alteration or change requiring the consent of the Series B Requisite Holders pursuant to clause (a) in the preceding sentence of this Subsection 3.5.

4. Optional Conversion. The holders of the Preferred Stock shall have conversion rights as follows (the "Conversion Rights"):

4.1 Right to Convert.

4.1.1 Conversion Ratio.

(a) Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series A Original Issue Price by the Series A Conversion Price (as defined below) in effect at the time of conversion. The "Series A Conversion Price" shall initially be equal to $0.70. Such initial Series A Conversion Price, and the rate at which shares of Series A Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below.

(b) Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Series B Original Issue Price by the Series B Conversion Price (as defined below) in effect at the time of conversion. The "Series B Conversion Price" shall initially be equal to $0.9503. Such initial Series B Conversion Price, and the rate at which shares of Series B Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below. The "Series A Conversion Price" and "Series B Conversion Price," as applicable, are each referred to herein as a "Conversion Price."

4.1.2 Termination of Conversion Rights. In the event of a liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event, the Conversion Rights shall terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Preferred Stock.

4.2 Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of the Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board of Directors of the Corporation. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock the holder is at the time converting into Common Stock and the aggregate number of shares of Common Stock issuable upon such conversion.

4.3 Mechanics of Conversion.

4.3.1 Notice of Conversion. In order for a holder of Preferred Stock to voluntarily convert shares of Preferred Stock into shares of Common Stock, such holder shall surrender the certificate or certificates for such shares of Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation

against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), at the office of the transfer agent for the applicable series of Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent), together with written notice that such holder elects to convert all or any number of the shares of any series of Preferred Stock represented by such certificate or certificates and, if applicable, any event on which such conversion is contingent. Such notice shall state such holder's name or the names of the nominees in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. If required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or his, her or its attorney duly authorized in writing. The close of business on the date of receipt by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) of such certificates (or lost certificate affidavit and agreement) and notice shall be the time of conversion (the "Conversion Time"), and the shares of Common Stock issuable upon conversion of the shares represented by such certificate shall be deemed to be outstanding of record as of such date. The Corporation shall, as soon as practicable after the Conversion Time, (i) issue and deliver to such holder of Preferred Stock, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof and a certificate for the number (if any) of the shares of the series of Preferred Stock represented by the surrendered certificate that were not converted into Common Stock, (ii) pay in cash such amount as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and (iii) pay all declared but unpaid dividends on the shares of Preferred Stock converted.

4.3.2 Reservation of Shares. The Corporation shall at all times when the Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued capital stock, for the purpose of effecting the conversion of the Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to the Certificate of Incorporation. Before taking any action which would cause an adjustment reducing the Conversion Price of a series of Preferred Stock below the then par value of the shares of Common Stock issuable upon conversion of such series of Preferred Stock, the Corporation will take any corporate action which may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and nonassessable shares of Common Stock at such adjusted Conversion Price.

4.3.3 Effect of Conversion. All shares of Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares shall immediately cease and terminate at the Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor, to receive payment in lieu of any fraction of a share otherwise issuable upon such conversion as provided in Subsection 4.2 and to receive payment of any

dividends declared but unpaid thereon. Any shares of Preferred Stock so converted shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock and the applicable series thereof accordingly.

4.3.4 No Further Adjustment. Upon any such conversion, no adjustment to the Conversion Price of the applicable series of Preferred Stock shall be made for any declared but unpaid dividends on such series of Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

4.3.5 Taxes. The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

4.4 Adjustments to Conversion Price for Diluting Issues.

4.4.1 Special Definitions. For purposes of this Article Fourth, the following definitions shall apply:

(a) "Option" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(b) "Series B Original Issue Date" shall mean the date on which the first share of Series B Preferred Stock was issued.

(c) "Convertible Securities" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(d) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to Subsection 4.4.3 below, deemed to be issued) by the Corporation after the Series B Original Issue Date, other than (1) the following shares of Common Stock and (2) shares of Common Stock deemed issued pursuant to the following Options and Convertible Securities (clauses (1) and (2), collectively, "Exempted Securities"):

(i) shares of Common Stock, Options or Convertible Securities issued as a dividend or distribution on Preferred Stock;

(ii) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock

split, subdivision or other distribution on shares of Common Stock that is covered by Subsection 4.5, 4.6, 4.7 or 4.8;

(iii) shares of Common Stock or Options issued to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors of the Corporation, including the Series B Director, and by the Corporation's stockholders in accordance with applicable law and, after the Series B Original Issue Date, Section 3.3(h),

(iv) shares of Common Stock or Convertible Securities actually issued upon the exercise of Options or shares of Common Stock actually issued upon the conversion or exchange of Convertible Securities, in each case provided such issuance is pursuant to the terms of such Option or Convertible Security;

(v) shares of Common Stock, Options or Convertible Securities issued to banks, equipment lessors or other financial institutions, or to real property lessors, pursuant to a debt financing, equipment leasing or real property leasing transaction approved by the Board of Directors of the Corporation, including a majority of the Preferred Directors then serving on the Board of Directors (not to exceed 6,000,000 shares of Common Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combo or other similar recapitalization affecting such shares));

(vi) shares of Common Stock, Options or Convertible Securities issued pursuant to the acquisition of another corporation or other entity by the Corporation by merger, purchase of substantially all of the assets or other reorganization or to a joint venture agreement, provided, that such issuances are approved by the Board of Directors of the Corporation, including a majority of the Preferred Directors then serving on the Board of Directors (not to exceed 6,000,000 shares of Common Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combo or other similar recapitalization affecting such shares));

(vii) shares of Common Stock, Options or Convertible Securities issued in connection with collaboration, license, development, commercialization or other similar agreements or strategic partnerships approved by the Board of Directors of the Corporation, including a majority of the Preferred Directors then serving on the Board of Directors (not to exceed 6,000,000 shares of Common Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combo or other similar recapitalization affecting such shares)); and

(viii) up to 447,850 shares of Common Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combo or other similar recapitalization affecting such shares) issued upon exercise of warrants outstanding as of the Series B Original Issue Date.

4.4.2 No Adjustment of Conversion Price.

(a) No adjustment in the Series A Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the Series A Requisite Holders agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

(b) No adjustment in the Series B Conversion Price shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the Series B Requisite Holders agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

4.4.3 Deemed Issue of Additional Shares of Common Stock.

(a) If the Corporation at any time or from time to time after the Series B Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which are themselves Exempted Securities) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability, convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(b) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Conversion Price of a series of Preferred Stock pursuant to the terms of Subsection 4.4.4, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion and/or exchange, then, effective upon such increase or decrease becoming effective, the applicable Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Conversion Price as would have been obtained had such revised terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this clause (b) shall have the effect of increasing the Conversion Price of a series of Preferred Stock to an amount which exceeds the lower of (i) the Conversion Price of such series of Preferred Stock in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security, or (ii) the Conversion Price of such series of Preferred Stock that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(c) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities), the issuance of which did not result in an adjustment to the Conversion Price of a series of Preferred Stock pursuant to the terms of Subsection 4.4.4 (either because the consideration per share (determined pursuant to Subsection 4.4.5) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Conversion Price of such series of Preferred Stock then in effect, or because such Option or Convertible Security was issued before the Series B Original Issue Date), are revised after the Series B Original Issue Date as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Subsection 4.4.3(a)) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(d) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security (or portion thereof) which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Conversion Price of a series of Preferred Stock pursuant to the terms of Subsection 4.4.4, the Conversion Price of such series of Preferred Stock shall be readjusted to such Conversion

Price as would have been obtained had such Option or Convertible Security (or portion thereof) never been issued.

(e) If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, is calculable at the time such Option or Convertible Security is issued or amended but is subject to adjustment based upon subsequent events, any adjustment to the Conversion Price of a series of Preferred Stock provided for in this Subsection 4.4.3 shall be effected at the time of such issuance or amendment based on such number of shares or amount of consideration without regard to any provisions for subsequent adjustments (and any subsequent adjustments shall be treated as provided in clauses (b) and (c) of this Subsection 4.4.3). If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, cannot be calculated at all at the time such Option or Convertible Security is issued or amended, any adjustment to the Conversion Price of a series of Preferred Stock that would result under the terms of this Subsection 4.4.3 at the time of such issuance or amendment shall instead be effected at the time such number of shares and/or amount of consideration is first calculable (even if subject to subsequent adjustments), assuming for purposes of calculating such adjustment to the Conversion Price of such series of Preferred Stock that such issuance or amendment took place at the time such calculation can first be made.

4.4.4 Adjustment of Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time after the Series B Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Subsection 4.4.3), without consideration or for a consideration per share less than the applicable Conversion Price of a series of Preferred Stock in effect immediately prior to such issue, then the Conversion Price of such series of Preferred Stock shall be reduced, concurrently with such issue, to a price (calculated to the nearest one-hundredth of a cent) determined in accordance with the following formula:

$$CP_2 = CP_1 * (A + B) \div (A + C)$$

For purposes of the foregoing formula, the following definitions shall apply:

(a) "CP_2" shall mean the Conversion Price of such series of Preferred Stock in effect immediately after such issue of Additional Shares of Common Stock

(b) "CP_1" shall mean the Conversion Price of such series of Preferred Stock in effect immediately prior to such issue of Additional Shares of Common Stock;

(c) "A" shall mean the number of shares of Common Stock outstanding immediately prior to such issue of Additional Shares of Common Stock (treating for this purpose as outstanding all shares of Common Stock issuable upon exercise of Options outstanding immediately prior to such issue or upon conversion or exchange of Convertible

Securities (including the Preferred Stock) outstanding (assuming exercise of any outstanding Options therefor) immediately prior to such issue);

(d) "B" shall mean the number of shares of Common Stock that would have been issued if such Additional Shares of Common Stock had been issued at a price per share equal to CP_1 (determined by dividing the aggregate consideration received by the Corporation in respect of such issue by CP_1); and

(e) "C" shall mean the number of such Additional Shares of Common Stock issued in such transaction.

4.4.5 Determination of Consideration. For purposes of this Subsection 4.4, the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(a) Cash and Property: Such consideration shall:

(i) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;

(ii) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors of the Corporation; and

(iii) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (i) and (ii) above, as determined in good faith by the Board of Directors of the Corporation.

(b) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4.4.3, relating to Options and Convertible Securities, shall be determined by dividing:

(i) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon

the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(ii) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities.

4.4.6 Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are a part of one transaction or a series of related transactions and that would result in an adjustment to the Conversion Price of a series of Preferred Stock pursuant to the terms of Subsection 4.4.4, then, upon the final such issuance, the Conversion Price of such series of Preferred Stock shall be readjusted to give effect to all such issuances as if they occurred on the date of the first such issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

4.5 Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Series B Original Issue Date effect a subdivision of the outstanding Common Stock, the Conversion Price of each series of Preferred Stock in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Series B Original Issue Date combine the outstanding shares of Common Stock, the Conversion Price of each series of Preferred Stock in effect immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this subsection shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.6 Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series B Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable on the Common Stock in additional shares of Common Stock, then and in each such event the Conversion Price of each series of Preferred Stock in effect immediately before such event shall be decreased as of the time of such issuance or, in the

event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the applicable series of Preferred Stock then in effect by a fraction:

(1) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(2) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution.

Notwithstanding the foregoing, (a) if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of each series of Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of each series of Preferred Stock shall be adjusted pursuant to this subsection as of the time of actual payment of such dividends or distributions; and (b) that no such adjustment shall be made to a series of Preferred Stock if the holders of such series of Preferred Stock simultaneously receive a

dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of such series of Preferred Stock had been converted into Common Stock on the date of such event.

4.7 Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Series B Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation (other than a distribution of shares of Common Stock in respect of outstanding shares of Common Stock) or in other property and the provisions of Section 1 do not apply to such dividend or distribution, then and in each such event the holders of Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities or other property in an amount equal to the amount of such securities or other property as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.8 Adjustment for Merger or Reorganization, etc. Subject to the provisions of Subsection 2.3, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation in which the Common Stock (but not the Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by Subsections 4.4, 4.6 or 4.7), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Preferred Stock shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property which a holder of the number

of shares of Common Stock of the Corporation issuable upon conversion of one share of such series of Preferred Stock immediately prior to such reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors of the Corporation) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Preferred Stock, to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of the Conversion Price of each series of Preferred Stock) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Preferred Stock.

4.9 Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Conversion Price of a series of Preferred Stock pursuant to this Section 4, the Corporation at its expense shall, as promptly as reasonably practicable but in any event not later than 10 days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Preferred Stock that has been subject to an adjustment or readjustment a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property into which such series of Preferred Stock is convertible) and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of Preferred Stock (but in any event not later than 10 days thereafter), furnish or cause to be furnished to such holder a certificate setting forth (i) the Conversion Price of each series of Preferred Stock then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the conversion of each series of Preferred Stock.

4.10 Notice of Record Date. In the event:

(a) the Corporation shall take a record of the holders of its Common Stock (or other capital stock or securities at the time issuable upon conversion of the Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of capital stock of any class or any other securities, or to receive any other security; or

(b) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, or any Deemed Liquidation Event; or

(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Corporation,

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is proposed to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other capital stock or securities at the time issuable upon the conversion of any series of Preferred Stock) shall be

entitled to exchange their shares of Common Stock (or such other capital stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up, and the amount per share and character of such exchange applicable to each series of Preferred Stock and the Common Stock. Such notice shall be sent at least 10 days prior to the record date or effective date for the event specified in such notice.

5. Mandatory Conversion.

5.1 Trigger Events. Upon either (a) the closing of the sale of shares of Common Stock to the public at a price of at least $1.90 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock), in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least $50,000,000 of gross proceeds to the Corporation (before deduction of underwriters commissions and expenses) (a "Qualifying Public Offering") or (b) the date and time, or the occurrence of an event, specified by vote or written consent of the Requisite Holders (the time of such closing or the date and time specified or the time of the event specified in such vote or written consent is referred to herein as the "Mandatory Conversion Time"), (i) all outstanding shares of each series of Preferred Stock shall automatically be converted into shares of Common Stock, at the then effective conversion rate for such series of Preferred Stock and (ii) such shares may not be reissued by the Corporation.

5.2 Procedural Requirements. All holders of record of shares of Preferred Stock shall be sent written notice of the Mandatory Conversion Time and the place designated for mandatory conversion of all such shares of Preferred Stock pursuant to this Section 5. Such notice need not be sent in advance of the occurrence of the Mandatory Conversion Time. Upon receipt of such notice, each holder of shares of Preferred Stock shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the

alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice. If so required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. All rights with respect to the Preferred Stock converted pursuant to Subsection 5.1, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate at the Mandatory Conversion Time (notwithstanding the failure of the holder or holders thereof to surrender the certificates at or prior to such time), except only the rights of the holders thereof, upon surrender of their certificate or certificates (or lost certificate affidavit and agreement) therefor, to receive the items provided for in the next sentence of this Subsection 5.2. As soon as practicable after the Mandatory Conversion Time and the surrender of the certificate or certificates (or lost certificate affidavit and agreement) for Preferred Stock, the Corporation shall issue and deliver to such holder, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof, together with cash as provided in Subsection 4.2 in lieu of any fraction of a share of Common

Stock otherwise issuable upon such conversion and the payment of any declared but unpaid dividends on the shares of Preferred Stock converted. Such converted Preferred Stock shall be retired and cancelled and may not be reissued as shares of such series, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock and the applicable series thereof accordingly.

6. Repurchased, Redeemed or Acquired Shares. Any shares of Preferred Stock that are repurchased, redeemed or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately cancelled and retired and shall not be reissued, sold or transferred. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of Preferred Stock following such repurchase, redemption or other acquisition.

7. Waiver. Except as otherwise specified in the Certificate of Incorporation:

7.1 any of the rights, powers, preferences and other terms of the Preferred Stock set forth herein may be waived on behalf of all holders of Preferred Stock by the affirmative consent or vote of the Requisite Holders, provided such waiver by its terms is equally applicable to the Series A Preferred Stock and the Series B Preferred Stock;

7.2 any of the rights, powers, preferences and other terms of the Series A Preferred Stock set forth herein may be waived (in a manner that does not apply equally to the Series B Preferred Stock) on behalf of all holders of Series A Preferred Stock by the affirmative written consent or vote of the Series A Requisite Holders; and

7.3 any of the rights, powers, preferences and other terms of the Series B Preferred Stock set forth herein may be waived (in a manner that does not apply equally to the Series A Preferred Stock) on behalf of all holders of Series B Preferred Stock by the affirmative written consent or vote of the holders of the Series B Requisite Holders.

8. Notices. Any notice required or permitted by the provisions of this Article Fourth to be given to a holder of shares of Preferred Stock shall be mailed, postage prepaid, to the post office address last shown on the records of the Corporation, or given by electronic communication in compliance with the provisions of the General Corporation Law, and shall be deemed sent upon such mailing or electronic transmission.

FIFTH: Subject to any additional vote required by the Certificate of Incorporation or Bylaws, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the Bylaws of the Corporation.

SIXTH: Subject to any additional vote required by the Certificate of Incorporation, the number of directors of the Corporation shall be determined in the manner set forth in the Bylaws of the Corporation.

SEVENTH: Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

EIGHTH: Meetings of stockholders may be held within or without the State of Delaware, as the Bylaws of the Corporation may provide. The books of the Corporation may be kept outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Corporation.

NINTH: To the fullest extent permitted by law, each director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware is amended after approval by the stockholders of this Article Ninth to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.

Any repeal or modification of the foregoing provisions of this Article Ninth by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

TENTH: To the fullest extent permitted by applicable law, the Corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the Corporation (and any other persons to which General Corporation Law permits the Corporation to provide indemnification) through Bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the General Corporation Law.

Any amendment, repeal or modification of the foregoing provisions of this Article Tenth shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing at the time of such amendment, repeal or modification.

ELEVENTH: To the fullest extent permitted by law, the Corporation renounces any interest or expectancy of the Corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity; *provided*, that nothing herein is intended to diminish the fiduciary duties of any director of the

Corporation. An "Excluded Opportunity" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of, (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any such holder, other than someone who is an employee of the Corporation or any of its subsidiaries (collectively, "Covered Persons"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of the Corporation.

*** * ***

3. That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. That this Second Amended and Restated Certificate of Incorporation, which amends and restates the provisions of this corporation's Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

IN WITNESS WHEREOF, this Second Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 31st day of October, 2013.

By: /s/ Jill Milne
Jill Milne
Chief Executive Officer

Exhibit 3.2

BY-LAWS

OF

CATABASIS PHARMACEUTICALS, INC.

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ARTICLE I

STOCKHOLDERS

1.1 Place of Meetings. All meetings of stockholders shall be held at such place as may be designated from time to time by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President or, if not so designated, at the principal office of the corporation. The Board of Directors may, in its sole discretion, determine that a meeting shall not be held at any place, but may instead be held solely by means of remote communication in a manner consistent with the General Corporation Law of the State of Delaware.

1.2 Annual Meeting. The annual meeting of stockholders for the election of directors and for the transaction of such other business as may properly be brought before the meeting shall be held on a date and at a time designated by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President (which date shall not be a legal holiday in the place where the meeting is to be held).

1.3 Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time by only the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President, and may not be called by any other person or persons. The Board of Directors may postpone or reschedule any previously scheduled special meeting of stockholders. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting.

1.4 Notice of Meetings. Except as otherwise provided by law, notice of each meeting of stockholders, whether annual or special, shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given by a form of electronic transmission consented to (in a manner consistent with the General Corporation Law of the State of Delaware) by the stockholder to whom the notice is given. The notices of all meetings shall state the place, if any, date and time of the meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. If notice is given by mail, such notice shall be deemed given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. If notice is given by electronic transmission, such notice shall be deemed given at the time specified in Section 232 of the General Corporation Law of the State of Delaware.

1.5 Voting List. The Secretary shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, for a period of at least 10 days prior to the meeting: (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during

ordinary business hours, at the principal place of business of the corporation. If the meeting is to be held at a physical location (and not solely by means of remote communication), then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. The list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

1.6 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these By-laws, the holders of a majority in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum for the transaction of business; provided, however, that where a separate vote by a class or classes or series of capital stock is required by law or the Certificate of Incorporation, the holders of a majority in voting power of the shares of such class or classes or series of the capital stock of the corporation issued and outstanding and entitled to vote on such matter, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum entitled to take action with respect to the vote on such matter. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.7 Adjournments. Any meeting of stockholders may be adjourned from time to time to any other time and to any other place at which a meeting of stockholders may be held under these By-laws by the chairman of the meeting or by the stockholders present or represented at the meeting and entitled to vote, although less than a quorum. It shall not be necessary to notify any stockholder of any adjournment of less than 30 days if the time and place, if any, of the adjourned meeting, and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting, are announced at the meeting at which adjournment is taken, unless after the adjournment a new record date is fixed for the adjourned meeting. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting.

1.8 Voting and Proxies. Each stockholder shall have one vote for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders, or to express consent or dissent to corporate action without a meeting, may vote or express such consent or dissent in person (including by means of remote communications, if any, by which stockholders may be deemed to be present in person and vote at such meeting) or may authorize another person or persons to vote or act for such stockholder by a proxy executed or transmitted in a manner permitted by the General Corporation Law of the State of Delaware by the stockholder or such stockholder's authorized agent and delivered (including by electronic transmission) to the Secretary of the corporation. No such proxy shall be voted or acted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.9 Action at Meeting. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting shall be decided by the vote of the holders of shares of stock having a majority in voting power of the votes cast by the holders of all of the shares of stock present or represented at the meeting and voting affirmatively or negatively on such matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each such class or series, the holders of a majority in voting power of the shares of stock of that class or series present or represented at the meeting and voting affirmatively or negatively on such matter), except when a different vote is required by law, the Certificate of Incorporation or these By-laws. When a quorum is present at any meeting, any election by stockholders of directors shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

1.10 Conduct of Meetings.

(a) Chairman of Meeting. Meetings of stockholders shall be presided over by the Chairman of the Board, if any, or in the Chairman's absence by the Vice Chairman of the Board, if any, or in the Vice Chairman's absence by the Chief Executive Officer, or in the Chief Executive Officer's absence, by the President, or in the President's absence by a Vice President, or in the absence of all of the foregoing persons by a chairman designated by the Board of Directors, or in the absence of such designation by a chairman chosen by vote of the stockholders at the meeting. The Secretary shall act as secretary of the meeting, but in the Secretary's absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

(b) Rules, Regulations and Procedures. The Board of Directors may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders of the corporation as it shall deem appropriate including, without limitation, such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders of record of the corporation, their duly authorized and constituted proxies or such other persons as shall be determined; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

1.11 Action without Meeting.

(a) Taking of Action by Consent. Any action required or permitted to be taken at any annual or special meeting of stockholders of the corporation may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote on such action were present and voted. Except as otherwise provided by the Certificate of Incorporation, stockholders may act by written consent to elect directors; provided, however, that, if such consent is less than unanimous, such action by written consent may be in lieu of holding an annual meeting only if all of the directorships to which directors could be elected at an annual meeting held at the effective time of such action are vacant and are filled by such action.

(b) Electronic Transmission of Consents. A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or by a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the corporation can determine (i) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (ii) the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the Board of Directors. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

(c) Notice of Taking of Corporate Action. Prompt notice of the taking of corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of holders to take the action were delivered to the corporation.

ARTICLE II

DIRECTORS

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law or the Certificate of Incorporation.

2.2 Number, Election and Qualification. Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the corporation shall be established from time to time by the stockholders or the Board of Directors. The directors shall be elected at the annual meeting of stockholders by such stockholders as have the right to vote on such election. Election of directors need not be by written ballot. Directors need not be stockholders of the corporation.

2.3 Chairman of the Board; Vice Chairman of the Board. The Board of Directors may appoint from its members a Chairman of the Board and a Vice Chairman of the Board, neither of whom need be an employee or officer of the corporation. If the Board of Directors appoints a Chairman of the Board, such Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors and, if the Chairman of the Board is also designated as the corporation's Chief Executive Officer, shall have the powers and duties of the Chief Executive Officer prescribed in Section 3.7 of these By-laws. If the Board of Directors appoints a Vice Chairman of the Board, such Vice Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors. Unless otherwise provided by the Board of Directors, the Chairman of the Board or, in the Chairman's absence, the Vice Chairman of the Board, if any, shall preside at all meetings of the Board of Directors.

2.4 Tenure. Each director shall hold office until the next annual meeting of stockholders and until a successor is elected and qualified, or until such director's earlier death, resignation or removal.

2.5 Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors fixed pursuant to Section 2.2 of these By-laws shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.6 Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting of the Board of Directors duly held at which a quorum is present shall be regarded as the act of the Board of Directors, unless a greater number is required by law or by the Certificate of Incorporation.

2.7 Removal. Except as otherwise provided by the General Corporation Law of the State of Delaware, any one or more or all of the directors of the corporation may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors, except that the directors elected by the holders of a particular class or series

of stock may be removed without cause only by vote of the holders of a majority of the outstanding shares of such class or series.

2.8 Vacancies. Subject to the rights of holders of any series of Preferred Stock to elect directors, unless and until filled by the stockholders, any vacancy or newly-created directorship on the Board of Directors, however occurring, may be filled by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy shall be elected for the unexpired term of such director's predecessor in office, and a director chosen to fill a position resulting from a newly-created directorship shall hold office until the next annual meeting of stockholders and until a successor is elected and qualified, or until such director's earlier death, resignation or removal.

2.9 Resignation. Any director may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal office or to the Chairman of the Board, the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon delivery unless it is specified to be effective at some later time or upon the happening of some later event.

2.10 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.11 Special Meetings. Special meetings of the Board of Directors may be held at any time and place designated in a call by the Chairman of the Board, the Chief Executive Officer, the President, two or more directors, or by one director in the event that there is only a single director in office.

2.12 Notice of Special Meetings. Notice of the date, place, if any, and time of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (a) in person or by telephone at least 24 hours in advance of the meeting, (b) by sending written notice by reputable overnight courier, telecopy, facsimile or electronic transmission, or delivering written notice by hand, to such director's last known business, home or electronic transmission address at least 48 hours in advance of the meeting, or (c) by sending written notice by first-class mail to such director's last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.13 Meetings by Conference Communications Equipment. Directors may participate in meetings of the Board of Directors or any committee thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.14 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent to the action in writing or by electronic transmission, and the written consents or electronic transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

2.15 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation with such lawfully delegable powers and duties as the Board of Directors thereby confers, to serve at the pleasure of the Board of Directors. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members of the committee present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of law, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers which may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time to time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these By-laws for the Board of Directors. Except as otherwise provided in the Certificate of Incorporation, these By-laws, or the resolution of the Board of Directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

2.16 Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of Directors may from time to time determine. No such payment shall preclude any director from serving the corporation or any of its parent or subsidiary entities in any other capacity and receiving compensation for such service.

ARTICLE III

OFFICERS

3.1 Titles. The officers of the corporation shall consist of a Chief Executive Officer, a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors shall determine, including one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The Chief Executive Officer, President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, by the Certificate of Incorporation or by these By-laws, each officer shall hold office until such officer's successor is elected and qualified, unless a different term is specified in the resolution electing or appointing such officer, or until such officer's earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering a written resignation to the corporation at its principal office or to the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event. Any officer may be removed at any time, with or without cause, by vote of a majority of the directors then in office. Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following such officer's resignation or removal, or any right to damages on account of such removal, whether such officer's compensation be by the month or by the year or otherwise, unless such compensation is expressly provided for in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices other than those of Chief Executive Officer, President, Treasurer and Secretary. Each such successor shall hold office for the unexpired term of such officer's predecessor and until a successor is elected and qualified, or until such officer's earlier death, resignation or removal.

3.7 President; Chief Executive Officer. Unless the Board of Directors has designated another person as the corporation's Chief Executive Officer, the President shall be the Chief Executive Officer of the corporation. The Chief Executive Officer shall have general charge and supervision of the business of the corporation subject to the direction of the Board of Directors, and shall perform all duties and have all powers that are commonly incident to the office of chief executive or that are delegated to such officer by the Board of Directors. The President shall perform such other duties and shall have such other powers as the Board of Directors or the Chief Executive Officer (if the President is not the Chief Executive Officer) may from time to time prescribe. In the event of the absence, inability or refusal to act of the Chief Executive Officer or the President (if the President is not the Chief Executive Officer), the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the Chief Executive Officer and when so performing such duties shall have all the powers of and be subject to all the restrictions upon the Chief Executive Officer.

3.8 Vice Presidents. Each Vice President shall perform such duties and possess such powers as the Board of Directors or the Chief Executive Officer may from time to time

prescribe. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.9 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the chairman of the meeting shall designate a temporary secretary to keep a record of the meeting.

3.10 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned by the Board of Directors or the Chief Executive Officer. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these By-laws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.

The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.11 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

3.12 Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

ARTICLE IV

CAPITAL STOCK

4.1 Issuance of Stock. Subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any shares of the authorized capital stock of the corporation held in the corporation's treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such lawful consideration and on such terms as the Board of Directors may determine.

4.2 Stock Certificates; Uncertificated Shares. The shares of the corporation shall be represented by certificates, provided that the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of the corporation's stock shall be uncertificated shares. Every holder of stock of the corporation represented by certificates shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, representing the number of shares held by such holder registered in certificate form. Each such certificate shall be signed in a manner that complies with Section 158 of the General Corporation Law of the State of Delaware.

Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of Incorporation, these By-laws, applicable securities laws or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate representing shares of such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

Within a reasonable time after the issuance or transfer of uncertificated shares, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to Sections 151, 202(a) or 218(a) of the General Corporation Law of the State of Delaware or, with respect to Section 151 of General Corporation Law of the State of Delaware, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

4.3 Transfers. Shares of stock of the corporation shall be transferable in the manner prescribed by law and in these By-laws. Transfers of shares of stock of the corporation shall be made only on the books of the corporation or by transfer agents designated to transfer shares of stock of the corporation. Subject to applicable law, shares of stock represented by certificates shall be transferred only on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these By-laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these By-laws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock in place of any previously issued certificate alleged to have been lost, stolen or destroyed, upon such terms and conditions as the Board of Directors may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity and posting of such bond as the Board of Directors may require for the protection of the corporation or any transfer agent or registrar.

4.5 Record Date. The Board of Directors may fix in advance a date as a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders or to express consent (or dissent) to corporate action without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not precede the date on which the resolution fixing the record date is adopted, and such record date shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 10 days after the date of adoption of a record date for a consent without a meeting, nor more than 60 days prior to any other action to which such record date relates.

If no record date is fixed, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day before the day on which notice is given, or, if notice is waived, at the close of business on the day before the day on which the meeting is held. If no record date is fixed, the record date for determining stockholders entitled to express consent to corporate action without a meeting, when no prior action by the Board of Directors is necessary, shall be the day on which the first consent is properly delivered to the corporation. If no record date is fixed, the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

4.6 Regulations. The issue, transfer, conversion and registration of shares of stock of the corporation shall be governed by such other regulations as the Board of Directors may establish.

ARTICLE V

GENERAL PROVISIONS

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January of each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Waiver of Notice. Whenever notice is required to be given by law, by the Certificate of Incorporation or by these By-laws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before, at or after the time of the event for which notice is to be given, shall be deemed equivalent to notice required to be given to such person. Neither the business nor the purpose of any meeting need be specified in any such waiver. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

5.4 Voting of Securities. Except as the Board of Directors may otherwise designate, the Chief Executive Officer, the President or the Treasurer may waive notice of, vote, or appoint any person or persons to vote, on behalf of the corporation at, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at, any meeting of stockholders or securityholders of any other entity, the securities of which may be held by this corporation.

5.5 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.6 Certificate of Incorporation. All references in these By-laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and in effect from time to time.

5.7 Severability. Any determination that any provision of these By-laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these By-laws.

5.8 Pronouns. All pronouns used in these By-laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

ARTICLE VI

AMENDMENTS

6.1 By the Board of Directors. These By-laws may be altered, amended or repealed, in whole or in part, or new by-laws may be adopted by the Board of Directors.

6.2 By the Stockholders. These By-laws may be altered, amended or repealed, in whole or in part, or new by-laws may be adopted by the affirmative vote of the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at any annual meeting of stockholders, or at any special meeting of stockholders, provided notice of such alteration, amendment, repeal or adoption of new by-laws shall have been stated in the notice of such special meeting.

Exhibit 10.1

CATABASIS PHARMACEUTICALS, INC.

AMENDED AND RESTATED
INVESTORS' RIGHTS AGREEMENT

THIS AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "Agreement") is made as of the 31st day of October, 2013, by and among Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "Investor".

RECITALS

WHEREAS, the Company and certain of the Investors have previously entered into that certain Investors' Rights Agreement, dated as of April 7, 2010 (the "Prior Agreement");

WHEREAS, concurrently with the execution of this Agreement, the Company and certain of the Investors are entering into a Series B Preferred Stock Purchase Agreement (as the same may be amended from time to time, the "Purchase Agreement") providing for the sale of shares of the Company's Series B Preferred Stock, $0.001 par value per share (the "Series B Preferred Stock"), under which certain of the Company's and such Investors' obligations are conditioned upon the execution and delivery of this Agreement by the Investors and the Company; and

WHEREAS, the undersigned may amend the Prior Agreement on behalf of all parties thereto pursuant to and subject to the limitations set forth in Section 6.6 of the Prior Agreement.

NOW, THEREFORE, in consideration of these premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree that the Prior Agreement be, and hereby is, amended and restated in its entirety as follows:

1. Definitions. For purposes of this Agreement:

1.1 "Affiliate" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including without limitation any general partner, managing member, officer or director of such Person or any venture capital fund or another entity now or hereafter existing which is controlled by or under common control with one or more general partners or managing members of, or shares the same management company or investment advisor with, such Person. For clarity, (a) SV Life Sciences Fund V, L.P. and SV Life Sciences Fund V Strategic Partners, L.P. (collectively, "SVLS") are Affiliates of one another, (b) North River Investors (Bermuda) L.P., North River Investors (Bermuda) L.P., Salthill Investors (Bermuda) L.P. and Salthill Partners, L.P. (collectively, "Wellington Investors") are Affiliates of one another and (c) Lightstone Ventures, L.P. and Lightstone Ventures (A), L.P. (collectively, "Lightstone Ventures") are Affiliates of one another.

1.2 "Board" means the Board of Directors of the Company.

1.3 "Common Stock" means shares of the Company's common stock, par value $0.001 per share.

1.4 "Damages" means any loss, damage, or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, or liability (or any action in respect thereof) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.5 "Derivative Securities" means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly), Common Stock, including options and warrants.

1.6 "Exchange Act" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.7 "Excluded Registration" means (i) a registration relating to the sale of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, or similar plan; (ii) a registration relating to an SEC Rule 145 transaction; (iii) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (iv) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.8 "Form S-1" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.9 "Form S-3" means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.10 "GAAP" means generally accepted accounting principles in the United States, consistently applied.

1.11 "Holder" means any holder of Registrable Securities who is a party to this Agreement.

1.12 "Immediate Family Member" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-

law, brother-in-law, or sister-in-law, including adoptive relationships, of a natural person referred to herein.

1.13 "Initiating Holders" means, collectively, Holders who properly initiate a registration request under this Agreement.

1.14 "IPO" means the Company's first firm-commitment underwritten public offering of its Common Stock pursuant to an effective registration statement under the Securities Act.

1.15 "Major Investor" means each of SVLS, MedImmune Ventures, Inc. ("MedImmune"), Clarus LifeSciences II, L.P. ("Clarus"), Advanced Technology Ventures ("ATV") and Lightstone Ventures, so long as each such Investor continues to hold at least 1,000,000 shares of Registrable Securities (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof).

1.16 "New Securities" means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

1.17 "Person" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.18 "Preferred Stock" means shares of the Company's Preferred Stock, par value $0.001 per share.

1.19 "Qualified IPO" means the sale of shares of Common Stock to the public at a price of at least $1.90 per share (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock), in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act, resulting in at least $50,000,000 of gross proceeds to the Company (before deduction of underwriters commissions and expenses).

1.20 "Registrable Securities" means (i) the Common Stock issuable or issued upon conversion of the Preferred Stock; (ii) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of any other securities of the Company acquired by the Investors after the date hereof; (iii) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of any other securities of the Company issued as MedImmune Director Compensation (as defined in Section 5.8) and (iv) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clauses (i) through (iii) above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Section 6.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Section 2.13 of this Agreement.

1.21 "Registrable Securities then outstanding" means the number of shares determined by adding the number of shares of outstanding Common Stock that are Registrable Securities and the number of shares of Common Stock issuable (directly or indirectly) pursuant to then exercisable and/or convertible securities that are Registrable Securities.

1.22 "Restricted Securities" means the securities of the Company required to bear the legend set forth in Section 2.12(b) hereof.

1.23 "SEC" means the Securities and Exchange Commission.

1.24 "SEC Rule 144" means Rule 144 promulgated by the SEC under the Securities Act, or any successor provisions.

1.25 "SEC Rule 145" means Rule 145 promulgated by the SEC under the Securities Act, or any successor provisions.

1.26 "Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.27 "Selling Expenses" means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Section 2.6.

1.28 "Series A Director" means each director of the Company that the holders of record of the Series A Preferred Stock are entitled, exclusively and as a separate class, to elect pursuant to the Company's Certificate of Incorporation.

1.29 "Series B Director" means the director of the Company that the holders of record of the Series B Preferred Stock are entitled, exclusively and as a separate class, to elect pursuant to the Company's Certificate of Incorporation, and together with the Series A Directors, the "Preferred Directors."

1.30 "Series A Preferred Stock" means shares of the Company's Series A Preferred Stock, par value $0.001 per share.

1.31 "Significant Investor" means any Investor that, individually or together with such Investor's Affiliates, holds at least 500,000 shares of Registrable Securities (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof).

2. Registration Rights. The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) Form S-1 Demand. If at any time after the earlier of (i) three (3) years after the date of this Agreement or (ii) one hundred eighty (180) days after the effective date of the registration statement for the IPO, the Company receives a request from Holders of a

majority of the Registrable Securities then outstanding that the Company file a Form S-1 registration statement with respect to Registrable Securities then outstanding having an anticipated aggregate offering price to the public, net of Selling Expenses, of not less than $10,000,000, then the Company shall (i) within ten (10) days after the date such request is given, give notice thereof (the "Demand Notice") to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within sixty (60) days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days after the date the Demand Notice is given, and in each case, subject to the limitations of Section 2.1(c) and Section 2.3.

(b) Form S-3 Demand. If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least 35% of the Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least $1 million, then the Company shall (i) within ten (10) days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within forty-five (45) days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days after the date the Demand Notice is given, and in each case, subject to the limitations of Section 2.1(c) and Section 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Section 2.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Board it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than sixty (60) days after the request of the Initiating Holders is given; *provided, however*, that the Company may not invoke this right more than once in any twelve (12) month period; and *provided further* that the Company shall not register any securities for its own account or that of any other stockholder during such sixty (60) day period other than an Excluded Registration.

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(a) (i) during the period that is sixty (60) days before the Company's good faith estimate of the date of filing of (so long as the Company

delivers notice to the holders of Registrable Securities, within thirty (30) days after its receipt of any Demand Notice, of its intent to file such registration statement), and ending on a date that is one hundred eighty (180) days after the effective date of, a Company-initiated registration, *provided*, that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; (ii) after the Company has effected two registrations pursuant to Section 2.1(a); or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Section 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(b)(i) during the period that is thirty (30) days before the Company's good faith estimate of the date of filing of, and ending on a date that is ninety (90) days after the effective date of, a Company-initiated registration, *provided*, that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; or (ii) if the Company has effected two registrations pursuant to Section 2.1(b) within the twelve (12) month period immediately preceding the date of such request. A registration shall not be counted as "effected" for purposes of this Section 2.1(d) until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration (other than as a result of a material adverse change to the condition or business of the Company), elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Section 2.6, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Section 2.1(d).

2.2 Company Registration. If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its securities under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Section 2.3, cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Section 2.6

2.3 Underwriting Requirements.

(a) If, pursuant to Section 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Initiating Holders, subject only to the reasonable approval of the Company. In such event, the right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 2.4(e)) enter into an underwriting agreement

in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Section 2.3, if the managing underwriter(s) advise(s) the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among such Holders of Registrable Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall mutually be agreed to by all such selling Holders; *provided, however*, that the number of Registrable Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely

excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Section 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. In no event shall any Registrable Securities be excluded from such offering unless all other securities held by equity holders of the Company who are not Investors are first entirely excluded. If the underwriters determine in their sole discretion that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable to) the number of Registrable Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering, or (ii) the number of Registrable Securities included in the offering be reduced below thirty percent (30%) of the total number of securities included in such offering, unless such offering is in connection with the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities are included in such offering. For purposes of the provision in this Section 2.3(b) concerning apportionment, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction

with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) For purposes of Section 2.1, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Section 2.3(a), fewer than fifty percent (50%) of the total number of Registrable Securities that Holders have requested to be included in such registration statement are actually included.

2.4 Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the registration statement has been completed; *provided, however*, that (i) such one hundred twenty (120) day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such one hundred twenty (120) day period shall be extended for up to an additional ninety (90) days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; *provided* that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter(s) of such offering;

(f) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(h) promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

2.5 Furnish Information. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.6 Expenses of Registration. All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements of one counsel for the selling Holders ("Selling Holder Counsel"), shall be borne and paid by the Company; *provided, however*, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit their right to one registration pursuant to Section 2.1(a) or Section 2.1(b), as the case may be; *provided further* that if, at the time of such withdrawal, the Holders shall have learned of a material adverse change in

the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Section 2.1(a) or Section 2.1(b). All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.7 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification. If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel, investment advisors and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; *provided, however*, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel, investment advisors and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; *provided, however*, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any

such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and *provided further* that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Sections 2.8(b) and 2.8(d) exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; *provided, however*, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification

may not be enforced in such case, notwithstanding the fact that this Section 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; *provided*, *however*, that, in any such case, (x) no Holder will be required to contribute any amount in excess of the public offering price of all such

Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and *provided further* that in no event shall a Holder's liability pursuant to this Section 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder**)**, except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.9 Reports Under Exchange Act. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company; and (iii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

2.10 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of at least 60% of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that (i) would allow such holder or prospective holder to include such securities in any registration unless, under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the number of the Registrable Securities of the Holders that are included or (ii) would allow such holder or prospective holder to initiate a demand for registration of any securities held by such holder or prospective holder; provided that this limitation shall not apply to any additional Investor who becomes a party to this Agreement in accordance with Section 6.9.

2.11 "Market Stand-off" Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the registration by the Company of shares of its Common Stock under the Securities Act in connection with the IPO and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days, which period may be extended upon the request of the managing underwriter if the Company is not an emerging growth company (as contemplated by the Jumpstart Our Business Startups Act of 2012), to the extent required by any FINRA rules, for an additional period of up to fifteen (15) days if the Company issues or proposes to issue an earnings or other public release within fifteen (15) days of the expiration of the 180-day lockup period), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for the IPO or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Section 2.11 shall apply only to the IPO, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, and shall be applicable to the Holders only if all officers and directors of the Company and all stockholders individually owning more than one percent (1%) of the Company's outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding shares of the Company's preferred stock) are subject to the same restrictions. The underwriters in connection with the IPO are intended third-party beneficiaries of this Section 2.11 and shall have the right, power, and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with the IPO that are consistent with this Section 2.11 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Holders subject to such agreements, based on the number of shares subject to such agreements.

2.12 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate or instrument representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Section 2.12(c)) be stamped or otherwise imprinted with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Section 2.12.

(c) The holder of each certificate representing Restricted Securities, by acceptance thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any

other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144 or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder for no consideration; *provided* that each transferee agrees in writing to be subject to the terms of this Section 2.12. Each certificate or instrument evidencing the Restricted Securities transferred as above provided shall bear, except if such transfer is made pursuant to SEC Rule 144, the appropriate restrictive legend set forth in Section 2.12(b), except that such certificate shall not bear such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13 Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Section 2.1 or Section 2.2 shall terminate upon the earlier to occur of:

(a) the closing of a Deemed Liquidation Event, as such term is defined in the Company's Certificate of Incorporation, and the distribution of proceeds, if any, to, or into escrow for the benefit of, the Company's stockholders in accordance with the Certificate of Incorporation;

(b) such time, following an IPO, as such Holder's Registrable Securities become eligible for sale pursuant to Rule 144(b)(1)(i) under the Securities Act and a period of at least one year, as determined in accordance with paragraph (d) of Rule 144 under the Securities Act, has elapsed since the later of the date such shares were acquired from the Company or an affiliate of the Company; and

(c) five (5) years after the closing of a Qualified IPO.

3. Information and Observer Rights.

3.1 Delivery of Financial Statements. The Company shall deliver to each Significant Investor, *provided that* the Board has not reasonably determined that such Significant Investor is a competitor of the Company (*provided*, *further*, that for purposes of this Section 3.1, so long as MedImmune's primary line of business is not directly competitive with the primary line of business of the Company, MedImmune shall not be deemed to be a competitor of the Company, and no Affiliate of MedImmune shall be deemed to be a competitor of the Company unless such Affiliate' s primary line of business is directly competitive with the primary line of business of the Company):

(a) ninety (90) days after the end of each fiscal year of the Company, or as soon as practicable thereafter, (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the Budget (as defined below) for such year, with an explanation of any material differences

between such amounts and a schedule as to the sources and applications of funds for such year, and (iii) a statement of stockholders' equity as of the end of such year;

(b) one hundred fifty (150) days after the end of each fiscal year of the Company, or as soon as practicable thereafter, (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and (iii) a statement of stockholders' equity as of the end of such year, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Board;

(c) as soon as practicable, but in any event within thirty (30) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and of cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(d) as soon as practicable, but in any event within thirty (30) days after the end of each of the four (4) quarters of each fiscal year of the Company, a statement showing the number of shares of each class and series of capital stock and securities convertible into or exercisable for shares of capital stock outstanding at the end of the period, the Common Stock issuable upon conversion or exercise of any outstanding securities convertible or exercisable for Common Stock and the exchange ratio or exercise price applicable thereto, and the number of shares of issued stock options and stock options not yet issued but reserved for issuance, if any, all in sufficient detail as to permit the Significant Investors to calculate their respective percentage equity ownership in the Company;

(e) as soon as practicable, but in any event within thirty (30) days of the end of each month, an unaudited income statement and statement of cash flows for such month and for the current fiscal year to date, and an unaudited balance sheet and statement of stockholders' equity as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(f) as soon as practicable, but in any event thirty (30) days before the end of each fiscal year (unless a majority of the Board, including at least a majority of the Preferred Directors then serving on the Board, consents otherwise), a budget and business plan for the next fiscal year (collectively, the "Budget"), approved by the Board, including at least a majority of the Preferred Directors then serving on the Board, and prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company;

(g) such other information relating to the financial condition, business, prospects, or corporate affairs of the Company as any Significant Investor may from time to time reasonably request; *provided, however*, that the Company shall not be obligated under this

Section 3.1 to provide information (i) that the Company reasonably determines in good faith to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or (ii) the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 during the period starting with the date forty-five (45) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; *provided* that the Company's covenants under this Section 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2 Inspection. The Company shall permit each Major Investor (provided that the Board has not reasonably determined that such Major Investor is a competitor of the Company), at such Major Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Major Investor; *provided, however*, that the Company shall not be obligated pursuant to this Section 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Observer Rights. As long as each of SVLS, MedImmune, Clarus, ATV and Lightstone Ventures continues to be a Major Investor, the Company shall invite one representative of each of SVLS, MedImmune, Clarus, ATV and Lightstone Ventures, as applicable, to attend all meetings of the Board, the Company's scientific advisory board, if any and other similar advisory boards, if any, in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents, and other materials that it provides to its directors or advisory board members, as applicable, at the same time and in the same manner as provided to such directors or advisory board members; *provided, however*, that each such representative shall agree to hold in confidence and trust all information so provided; and *provided further*, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a conflict of interest, or if such Investor or its representative is a competitor of the Company.

3.4 Termination of Information and Observer Rights. The covenants set forth in Sections 3.1, 3.2 and 3.3 shall terminate and be of no further force or effect upon the earlier to

occur of (i) the closing of an IPO or (ii) the closing of a Deemed Liquidation Event (as such term is defined in the Company's Certificate of Incorporation) and the distribution of proceeds, if any, to, or into escrow for the benefit of, the Company's stockholders in accordance with the Certificate of Incorporation.

3.5 Confidentiality. Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement or pursuant to board observer rights (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 3.5 by such Investor), (b) is or has been independently developed or conceived by the Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to the Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; *provided, however,* that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, investment advisors and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Section 3.5; (iii) to any Affiliate, partner, member, stockholder, or wholly owned subsidiary of such Investor in the ordinary course of business, *provided* that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information; or (iv) as may otherwise be required by law, stock exchange rules or court order; *provided* that the Investor promptly notifies the Company of such disclosure and takes reasonable steps to minimize the extent of any such required disclosure.

4. Rights to Future Stock Issuances.

4.1 Right of First Offer. Subject to the terms and conditions of this Section 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to each Significant Investor in its respective *pro rata* portion as described in Section 4.1(b) below. A Significant Investor shall be entitled to apportion the right of first offer hereby granted to it among itself and its Affiliates in such proportions as it deems appropriate; *provided that* the Board has not reasonably determined that such Affiliate is a competitor of the Company; and *provided, further*, that for purposes of this Section 4.1, no Affiliate of MedImmune shall be deemed to be a competitor of the Company unless such Affiliate' s primary line of business is directly competitive with the primary line of business of the Company.

(a) The Company shall give notice (the "Offer Notice") to each Significant Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.

(b) By notification to the Company within twenty (20) calendar days after the Offer Notice is given, each Significant Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the Offer Notice, up to that portion of such

New Securities which equals the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by such Significant Investor bears to the total Common Stock of the Company then outstanding (assuming full conversion and/or exercise, as applicable, of all Preferred Stock and other Derivative Securities). At the expiration of such twenty (20) calendar day period, the Company shall promptly notify each Significant Investor that elects to purchase or acquire all the shares available to it (each, a "Fully Exercising Investor") of any other Significant Investor's failure to do likewise. During the ten (10) calendar day period commencing after the Company has given such notice, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the New Securities for which Significant Investors were entitled to subscribe but that were not subscribed for by the Significant Investors which is equal to the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Stock and any other Derivative Securities then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by all Fully Exercising Investors who wish to purchase such unsubscribed shares. The closing of any sale pursuant to this Section 4.1(b) shall occur within the later of one hundred and twenty (120) calendar days after the date that the Offer Notice is given and the date of initial sale of New Securities pursuant to Section 4.1(c).

(c) If all New Securities referred to in the Offer Notice are not elected to be purchased or acquired as provided in Section 4.1(b), the Company may, during the ninety (90) calendar day period following the expiration of the periods provided in Section 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within thirty (30) calendar days after the execution thereof, the right provided hereunder shall be deemed to be revived and such New Securities shall not be offered unless first reoffered to the Significant Investors in accordance with this Section 4.1.

(d) The right of first offer in this Section 4.1 shall not be applicable to (i) Exempted Securities (as defined in the Company's Certificate of Incorporation); (ii) shares of Common Stock issued in the IPO; and (iii) the issuance of shares of Series B Preferred Stock pursuant to the Purchase Agreement.

4.2 Termination. The covenants set forth in Section 4.1 shall terminate and be of no further force or effect upon the earlier to occur of (i) the closing of an IPO or (ii) the closing of a Deemed Liquidation Event (as such term is defined in the Company's Certificate of Incorporation) and the distribution of proceeds, if any, to, or into escrow for the benefit of, the Company's stockholders in accordance with the Certificate of Incorporation.

5. Additional Covenants.

5.1 Insurance. The Company shall use commercially reasonable efforts to maintain, from financially sound and reputable insurers (a) Directors and Officers liability insurance with coverage in an amount of at least $2,000,000 (subject to increase, with the approval of the Board, to at least $5,000,000 immediately prior to the IPO) and (b) term "key-person" insurance with coverage in an amount of at least $1,000,000 (or such greater amount as may be determined by the Board) on such employees and officers deemed necessary by the Board, in each case on terms and conditions satisfactory to the Board, until such time as the Board determines that such insurance should be discontinued. The key-person policy shall name the Company as loss payee, and neither policy shall be cancelable by the Company without prior approval by the Board.

5.2 Employee Agreements. The Company will cause (i) each person now or hereafter employed by it or by any subsidiary (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement and (ii) each employee to enter into a one (1) year non-competition and non-solicitation agreement, substantially in the form attached hereto as Exhibit A. In addition, the Company shall not amend, modify, terminate, waive, or otherwise alter, in whole or in part, any of the

above-referenced agreements or any stock option or restricted stock agreement between the Company and any employee or consultant, without the approval of the Board (including the affirmative approval of at least a majority of the Preferred Directors then serving on the Board).

5.3 Employee Stock. Unless otherwise approved by the Board, including the affirmative approval of a majority of the Preferred Directors then serving on the Board, all future employees and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (i) vesting of shares over a four (4) year period, with the first twenty-five percent (25%) of such shares vesting following twelve (12) months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following thirty-six (36) months and (ii) a market stand-off provision substantially similar to that in Section 2.11 of this Agreement. In addition, unless otherwise approved by the Board, including the affirmative approval of a majority of the Preferred Directors then serving on the Board, (a) the Company shall retain a "right of first refusal" on transfers of stock by such employees and consultants until the Company's IPO and shall have the right to repurchase unvested shares at the lower of cost or fair market value upon termination of the employment or other service relationship of a holder of restricted stock and (b) all award agreements issued under the Company's Third Amended and Restated 2008 Equity Incentive Plan or any other equity incentive plan shall provide that each recipient of an equity-based award under such plan that would result in such recipient's holding, or being entitled to acquire, shares of capital stock of the Company constituting one percent (1%) or more of the Company's then outstanding Common Stock (treating for this purpose all shares of Common Stock issuable upon exercise or conversion of outstanding options, warrants or convertible securities as if exercised and/or converted) shall be bound by and subject to drag-along obligations substantially similar to those set forth in Section 3 of the Voting Agreement, dated as

of the date hereof, by and among the Company and the stockholders listed therein, as the same may be amended from time to time.

5.4 Qualified Small Business Stock. The Company shall use commercially reasonable efforts to cause the shares of Preferred Stock held by the Investors, as well as any shares into which such shares are converted, within the meaning of Section 1202(f) of the Internal Revenue Code (the "Code"), to constitute "qualified small business stock" as defined in Section 1202(c) of the Code; *provided, however*, that such requirement shall not be applicable if the Board determines, in its good-faith business judgment, that such qualification is inconsistent with the best interests of the Company. The Company shall submit to its stockholders (including the Investors) and to the Internal Revenue Service any reports that may be required under Section 1202(d)(1)(C) of the Code and the regulations promulgated thereunder. In addition, within twenty (20) business days after any Investor's written request therefor, the Company shall, at its option, either (i) deliver to such Investor a written statement indicating whether (and what portion of) such Investor's interest in the Company constitutes "qualified small business stock" as defined in Section 1202(c) of the Code or (ii) deliver to such Investor such factual information in the Company's possession as is reasonably necessary to enable such Investor to determine whether (and what portion of) such Investor's interest in the Company constitutes "qualified small business stock" as defined in Section 1202(c) of the Code.

5.5 Matters Requiring Investor Director Approval. So long as the holders of Preferred Stock are entitled to elect Preferred Directors, the Company hereby covenants and agrees with each of the Investors that it shall not, without approval of the Board, which approval must include the affirmative vote of at least a majority of the Preferred Directors then serving on the Board:

(a) make, or permit any subsidiary to make, any loan or advance to, or own any stock or other securities of, any subsidiary or other corporation, partnership, or other entity unless it is wholly owned by the Company;

(b) make, or permit any subsidiary to make, any loan or advance to any Person, including, without limitation, any employee or director of the Company or any subsidiary, except advances and similar expenditures in the ordinary course of business or under the terms of an employee stock or option plan approved by the Board and by the stockholders of the Company in accordance with applicable law and the Company's Certificate of Incorporation;

(c) guarantee, directly or indirectly, or permit any subsidiary to guarantee, directly or indirectly, any indebtedness except for trade accounts of the Company or any subsidiary arising in the ordinary course of business;

(d) make any investment inconsistent with any investment policy approved by the Board;

(e) incur any indebtedness in excess of $100,000 that is not included in a budget previously approved by the Board, other than trade credit incurred in the ordinary course of business;

(f) hire, terminate the employment of, or materially change the compensation of, an executive officer, including approving any option grants or stock awards to an executive officer;

(g) change the principal business of the Company, enter new lines of business, or exit the current line of business;

(h) sell, assign, license, pledge, or encumber any material technology or intellectual property of the Company, other than licenses granted in the ordinary course of business;

(i) enter into any transaction or business arrangement involving the payment, contribution, or assignment by the Company of money or assets in an amount greater than $1,000,000; or

(j) otherwise enter into or be party to any transaction with any director, officer, or employee of the company or any "associate" (as defined in Rules 12b-2 promulgated under the Exchange Act) of any such Person, except for (A) transactions contemplated by this Agreement, the Purchase Agreement and the Transaction Agreements (as defined in the Purchase Agreement) as in effect on the date hereof or amended in accordance with the terms hereof or thereof, as applicable, and (B) employment compensatory transactions with officers made in the ordinary course of business and approved by the Board or a committee thereof or employment compensatory transactions with non-officer employees made in the ordinary course of business.

5.6 Board Matters; Committees. Unless otherwise determined by the vote of a majority of the directors then in office, the Board shall meet at least four times a year in accordance with an agreed-upon schedule. The Company shall reimburse the non-employee directors and each Board observer appointed pursuant to Section 3.3 of this Agreement for all reasonable out-of-pocket travel expenses incurred (consistent with the Company's travel policy, if any)

in connection with attending meetings of the Board (including any committee thereof) and other meetings or events attended on behalf of the Company. Each Preferred Director shall be entitled in such person's discretion to be a member of any Board committee.

5.7 Successor Indemnification. If the Company or any of its successors or assignees (i) consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfers or conveys to another Person all or substantially all of the Company's assets, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board as in effect immediately before such transaction, whether such obligations are contained in the Company's Bylaws, its Certificate of Incorporation, or elsewhere, as the case may be.

5.8 MedImmune Director Compensation. In the event that the Company pays any compensation to any member of the Board that is designated by MedImmune (each, a "MedImmune Designee") in recognition of his or her service on the Board, such compensation (including any equity compensation) (the "MedImmune Director Compensation") otherwise

payable to the MedImmune Designee shall, upon the direction of such MedImmune Designee, be paid directly to MedImmune. Nothing in this Section 5.8 shall create an obligation on the part of the Company to pay any compensation to the MedImmune Designee.

5.9 Termination of Covenants. The covenants set forth in this Section 5, except for Section 5.7, shall terminate and be of no further force or effect upon the earlier to occur of (i) the closing of the IPO (except to the extent the Directors and Officers liability insurance policy described in Section 5.1 is contemplated to provide coverage after the closing of the IPO) or (ii) the closing of a Deemed Liquidation Event (as such term is defined in the Company's Certificate of Incorporation) and the distribution of proceeds, if any, to, or into escrow for the benefit of, the Company's stockholders in accordance with the Certificate of Incorporation.

6. Miscellaneous.

6.1 Successors and Assigns. The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (i) is an Affiliate of a Holder; (ii) is a Holder's Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; or (iii) after such transfer, holds at least 1,000,000 shares of Registrable Securities (subject to appropriate adjustment for stock splits, stock dividends, combinations, and other recapitalizations); *provided, however*, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.11. For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (1) that is an Affiliate or stockholder of a Holder; (2) who is a Holder's Immediate Family Member; or (3) that is a trust for the benefit of an individual Holder or such Holder's Immediate Family Member shall be aggregated together and with those of the transferring Holder; *provided further* that all transferees who would not qualify individually for assignment of rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

6.2 Governing Law. This Agreement and any controversy arising out of or relating to this Agreement shall be governed by and construed in accordance with the General Corporation Law of the State of Delaware as to matters within the scope thereof, and as to all other matters shall be governed by and construed in accordance with the internal laws of the Commonwealth of Massachusetts, without regard to conflict of law principles that would result in the application of any law other than the law of the Commonwealth of Massachusetts.

6.3 Counterparts; Facsimile. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may also be executed and delivered by facsimile signature and in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

6.4 Titles and Subtitles. The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or: (i) personal delivery to the party to be notified; (ii) when sent, if sent by electronic mail or facsimile during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; (iii) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iv) one (1) business day after the business day of deposit with a nationally recognized overnight courier, freight prepaid, specifying next-day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such email address, facsimile number, or address as subsequently modified by written notice given in accordance with this Section 6.5. If notice is given to the Company, a copy shall also be sent to Lia Der Marderosian at WilmerHale, 60 State Street, Boston, MA 02109 and if notice is given to the Investors, a copy shall also be given to Michael H. Bison, Goodwin Procter LLP, 53 State St., Exchange Place, Boston, MA 02109.

6.6 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the holders of at least 60% of the Registrable Securities then outstanding; *provided that* the Company may in its sole discretion waive compliance with Section 2.12(c) (and the Company's failure to object promptly in writing after notification of a proposed assignment allegedly in violation of Section 2.12(c) shall be deemed to be a waiver); and *provided further* that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion (it being agreed that a waiver of the provisions of Section 4 with respect to a particular transaction shall be deemed to apply to all Significant Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Singificant Investors may nonetheless, by agreement with the Company, purchase securities in

such transaction). Further, no amendment or waiver may be effected so as to, expressly by its terms, disproportionately and adversely affect some but not all of the Investors unless the disproportionately and adversely affected Investors have approved such amendment or waiver (it being agreed that a waiver of Section 4 with respect to a particular transaction shall not be deemed to disproportionately affect any Significant Investors, notwithstanding the fact that certain Significant Investors may nonetheless, by agreement with the Company, purchase securities in such transaction). The Company shall give prompt notice of

any amendment or termination hereof or waiver hereunder to any party hereto that did not consent in writing to such amendment, termination, or waiver. Any amendment, termination or waiver effected in accordance with this Section 6.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

6.7 Severability. In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

6.8 Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

6.9 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of the Company's Series B Preferred Stock after the date hereof, any purchaser of such shares of Series B Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

6.10 Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties (including the Prior Agreement) is expressly canceled.

6.11 Dispute Resolution. The parties (a) hereby irrevocably and unconditionally submit to the jurisdiction of the federal and state courts located within the geographic boundaries of the United States District Court for the District of Massachusetts for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the federal and state courts located within the geographic boundaries of the United States District Court for the District of Massachusetts and (c) hereby waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court. Each of the parties to this Agreement consents to personal jurisdiction for any equitable action sought

in the U.S. District Court for the District of Massachusetts or any court of the Commonwealth of Massachusetts having subject matter jurisdiction.

6.12 Delays or Omissions. No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

6.13 Acknowledgment. The Company acknowledges that the Investors are in the business of venture capital investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises which may have products or services which compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise whether or not such enterprise has products or services which compete with those of the Company, and an Investor shall not be deemed to be a competitor of the Company for purposes of Sections 3.1 or 4.1 of this Agreement or Section 3.3 of the Right of First Refusal and Co-Sale Agreement dated as of the date hereof solely by virtue of any such investment or participation.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

COMPANY:

CATABASIS PHARMACEUTICALS, INC.

By: /s/ Jill Milne
Name: Jill Milne
Title: Chief Executive Officer

Address:

One Kendall Square,
Bldg. 1400E, Suite B14202
Cambridge, MA 02139

INVESTORS:

SV LIFE SCIENCES FUND V, L.P.

By: SV Life Sciences Fund V (GP), L.P., its Sole General Partner
By: SVLSF V, LLC, its sole General Partner

By: /s/ Denise W. Marks
Name: Denise W. Marks
Title: SVLSF V, LLC, Member

SV LIFE SCIENCES FUND V STRATEGIC PARTNERS, L.P.

By: SV Life Sciences Fund V (GP), L.P., its Sole General Partner
By: SVLSF V, LLC, its sole General Partner

By: /s/ Denise W. Marks
Name: Denise W. Marks
Title: SVLSF V, LLC, Member

MEDIMMUNE VENTURES, INC.

By: /s/ Michael Gutch
Name: Michael Gutch
Title: Managing Director

CLARUS LIFESCIENCES II, L.P.

By: its General Partner, Clarus Ventures II GP, LP
By: its General Partner, Clarus Ventures II, LLC

By: /s/ Nicholas G. Galakatos
Name: Nicholas G. Galakatos
Title: Managing Director

ADVANCED TECHNOLOGY VENTURES VIII, L.P.

By: ATV Associates VIII, L.L.C.
Its: General Partner

By: /s/ Jean George
Name: Jean George
Title: Managing Director

1110 PARTNERS, LLC

By: _____
Name: _____
Title: _____

MORGAN STANLEY, AS CUSTODIAN FOR THE ROTH IRA OF CHARLES N. STOLPER

By: **MORGAN STANLEY, AS CUSTODIAN**

By: _____

Name:
Title:

GEORGE MILNE AND CAROL MILNE AS JOINT TENANTS WITH RIGHTS OF SURVIVORSHIP

By:
Name:
Title:

Roger Brinner

Stephen D. Chubb

/s/ Michael Jirousek
Michael Jirousek

/s/ Jill Milne
Jill Milne

Charles N. Stolper

Christina T. Stolper

L. Eric Swann

Chris Thomajan

George Milne

LIGHTSTONE VENTURES, L.P.

By: LSV Associates, LLC, its General Partner

By: /s/ Jean M. George
Name: Jean M. George
Title: Managing Director

LIGHTSTONE VENTURES (A), L.P.

By: LSV Associates, LLC, its General Partner

By: /s/ Jean M. George
Name: Jean M. George
Title: Managing Director

NORTH RIVER INVESTORS (BERMUDA) L.P.

By: Wellington Management Company, LLP, as investment advisor

By: /s/ Steven M. Hoffman
Name: Steven M. Hoffman
Title: Vice President and Counsel

NORTH RIVER PARTNERS, L.P.

By: Wellington Management Company, LLP, as investment advisor

By: /s/ Steven M. Hoffman
Name: Steven M. Hoffman
Title: Vice President and Counsel

SALTHILL INVESTORS (BERMUDA) L.P.

By: Wellington Management Company, LLP, as investment advisor

By: /s/ Steven M. Hoffman
Name: Steven M. Hoffman
Title: Vice President and Counsel

SALTHILL PARTNERS, L.P.

By: Wellington Management Company, LLP, as investment advisor

By: /s/ Steven M. Hoffman
Name: Steven M. Hoffman
Title: Vice President and Counsel

SCHEDULE A
Investors

SV Life Sciences Fund V, L.P.
One Boston Place, Suite 3900
Boston, Massachusetts 02108
Attn: Michael Ross

SV Life Sciences Fund V Strategic Partners, L.P.
One Boston Place, Suite 3900
Boston, Massachusetts 02108
Attn: Michael Ross

MedImmune Ventures, Inc.
One MedImmune Way
Gaithersburg, MD 20878
Attn: Ron Laufer

with a copy to:

One MedImmune Way
Gaithersburg, MD 20878
Attn: Legal Department

Clarus LifeSciences II, L.P.
101 Main Street Suite 1210
Cambridge, MA 02142
Attn: Nicholas Galakatos and Scott Requadt

Advanced Technology Ventures VIII, L.P.
Bay Colony Corporate Center
1000 Winter Street, Suite 3700
Waltham, MA 02451-1148
Attn: Christian Cortis

Jill Milne
169 Mason Terrace
Brookline, MA 02446

Michael Jirousek

Morgan Stanley, as custodian for The Roth IRA of Charles N. Stolper
c/o Charles N. Stolper
761 Lowell Road
Concord, MA 01742

1110 PARTNERS, LLC
New Track Media
Suite 2750, PNC Bank Center
201 East Fifth Street
Cincinnati, Ohio 45202
Attn: Stephen Kent

Roger Brinner
1 Avery Street, #34D
Boston, MA 02111

Stephen D. Chubb
1 Avery Street, #33B
Boston, MA 02111

George Milne and Carol Milne as Joint Tenants with Rights of Survivorship
c/o Adam Milne
7 Heron Road
Mystic, CT 06355

Charles N. Stolper
761 Lowell Road
Concord, MA 01742

Christina T. Stolper

285 Third Street, #404
Cambridge, MA 02142

761 Lowell Road
Concord, MA 01742

Chris Thomajan
233 Rutledge Road

North River Investors (Bermuda) L.P.
Deutsche Bank

Belmont, MA 02478

c/o Wellington Management Company, LLP
280 Congress Street
Boston, MA 02210
Attn: Emily D. Babalas

L. Eric Swann
65 East India Road
#23F
Boston, MA 02110

North River Partners, L.P.
c/o Wellington Management Company, LLP
280 Congress Street
Boston, MA 02210
Attn: Emily D. Babalas

George Milne
4049 Shore Lane
P.O. Box 473
Boca Grande, FL 33921

Salthill Investors (Bermuda) L.P.
c/o Wellington Management Company, LLP
280 Congress Street
Boston, MA 02210
Attn: Emily D. Babalas

Lightstone Ventures, L.P.
500 Boylston Street, Suite 1380
Boston, MA 02116
Attn: General Counsel

Salthill Partners, L.P.
c/o Wellington Management Company, LLP
280 Congress Street
Boston, MA 02210
Attn: Emily D. Babalas

Lightstone Ventures (A), L.P.
500 Boylston Street, Suite 1380
Boston, MA 02116
Attn: General Counsel

EXHIBIT A

FORM OF NON-COMPETITION AND NON-SOLICITATION AGREEMENT

This Agreement is made between Catabasis Pharmaceuticals, Inc., a Delaware corporation (hereinafter referred to collectively with its subsidiaries as the "Company"), and (the "Employee").

For good consideration and in consideration of the employment or continued employment of the Employee by the Company, the Employee and the Company agree as follows:

1. Non-Competition and Non-Solicitation. While the Employee is employed by the Company and for a period of 18 months after the termination or cessation of such employment for any reason, the Employee will not directly or indirectly:

(a) Engage or assist others in engaging in any business or enterprise (whether as owner, partner, officer, director, employee, consultant, investor, lender or otherwise, except as the holder of not more than 1% of the outstanding stock of a publicly-held company) that is competitive with the Company's business, including but not limited to any business or enterprise that develops, manufactures, markets, licenses, sells or provides any product or service that competes with any product or service developed, manufactured, marketed, licensed, sold or provided, or planned to be developed, manufactured, marketed, licensed, sold or provided, by the Company while the Employee was employed by the Company; or

(b) Notwithstanding the foregoing, Section 1(a) shall not preclude the Employee from becoming an employee of, or from otherwise providing services to, a separate division or operating unit of a multi-divisional business or enterprise (a "Division") if: (i) the Division by which the Employee is employed, or to which the Employee provides services, is not competitive with the Company's business (within the meaning of Section 1(a)), (ii) the Employee does not provide services, directly or indirectly, to any other division or operating unit of such multi-divisional business or enterprise which is competitive with the Company's business (within the meaning of Section 1(a)) (individually, a "Competitive Division" and collectively, the "Competitive Divisions") and (iii) the Competitive Divisions, in the aggregate, accounted for less than one-third of the multi-divisional business or enterprises' consolidated revenues for the fiscal year, and each subsequent quarterly period, prior to the Employee's commencement of employment with the Division.

(c) Either alone or in association with others, solicit, divert or take away, or attempt to divert or take away, the business or patronage of any of the clients, customers, or business partners of the Company which were contacted, solicited, or served by the Company during the 12-month period prior to the termination or cessation of the Employee's employment with the Company; or

(d) Either alone or in association with others (i) solicit, induce or attempt to induce, any employee or independent contractor of the Company to terminate his or her employment or other engagement with the Company, or (ii) recruit or attempt to hire, or attempt to engage as an independent contractor, any person who was employed or otherwise engaged by

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the Company at any time during the term of the Employee's employment with the Company; provided, that this clause (ii) shall not apply to the recruitment or hiring or other engagement of any individual whose employment or other engagement with the Company has been terminated for a period of 6 months or longer.

(e) Extension. If the Employee violates the provisions of any of the preceding paragraphs of this Section 1, the Employee shall continue to be bound by the restrictions set forth in such paragraph until a period of 12 months has expired without any violation of such provisions.

2. Miscellaneous.

(a) Equitable Remedies. The restrictions contained in this Agreement are necessary for the protection of the business and goodwill of the Company and are considered by the Employee to be reasonable for such purpose. The Employee agrees that any breach of this Agreement is likely to cause the Company substantial and irrevocable damage which is difficult to measure. Therefore, in the event of any such breach or threatened breach, the Employee agrees that the Company, in addition to such other remedies which may be available, shall have the right to obtain an injunction from a court restraining such a breach or threatened breach and the right to specific performance of the provisions of this Agreement and the Employee hereby waives the adequacy of a remedy at law as a defense to such relief.

(b) Obligations to Third Parties. The Employee acknowledges and represents that this agreement and the Employee's employment with the Company will not violate any continuing obligation the Employee has to any former employer or other third party.

(c) Disclosure of this Agreement. The Employee hereby authorizes the Company to notify others, including but not limited to customers of the Company and any of the Employee's future employers or prospective business associates, of the terms and existence of this Agreement and the Employee's continuing obligations to the Company hereunder.

(d) Not Employment Contract. The Employee acknowledges that this Agreement does not constitute a contract of employment, does not imply that the Company will continue his/her employment for any period of time and does not change the at-will nature of his/her employment.

(e) Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of both parties and their respective successors and assigns, including any corporation with which, or into which, the Company may be merged or which may succeed to the Company's assets or business, provided, however, that the obligations of the Employee are personal and shall not be assigned by him or her. The Employee expressly consents to be bound by the provisions of this Agreement for the benefit of the Company or any subsidiary or affiliate thereof to whose employ the Employee may be transferred without the necessity that this Agreement be re-signed at the time of such transfer. Notwithstanding the foregoing, if the Company is merged with or into a third party which is engaged in multiple lines of business, or if a third party engaged in multiple lines of business succeeds to the Company's assets or business, then for purposes of Section 1(a), the term "Company" shall mean and refer to the business of

the Company as it existed immediately prior to such event and as it subsequently develops and not to the third party's other businesses.

(f) Interpretation. If any restriction set forth in Section 1 is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

(g) Severability. In case any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

(h) Waivers. No delay or omission by the Company in exercising any right under this Agreement will operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion is effective only in that instance and will not be construed as a bar to or waiver of any right on any other occasion.

(i) Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts (without reference to the conflicts of laws provisions thereof). Any action, suit, or other legal proceeding which is commenced to resolve any matter arising under or relating to any provision of this Agreement shall be commenced only in a court of the Commonwealth of Massachusetts (or, if appropriate, a federal court located within Massachusetts), and the Company and the Employee each consents to the jurisdiction of such a court. The Company and the Employee each hereby irrevocably waive any right to a trial by jury in any action, suit or other legal proceeding arising under or relating to any provision of this Agreement.

(j) Entire Agreement; Amendment. This Agreement supersedes all prior agreements, written or oral, between the Employee and the Company relating to the subject matter of this Agreement. This Agreement may not be modified, changed or discharged in whole or in part, except by an agreement in writing signed by the Employee and the Company. The Employee agrees that any change or changes in his/her duties, salary or compensation after the signing of this Agreement shall not affect the validity or scope of this Agreement.

(k) Captions. The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement.

THE EMPLOYEE ACKNOWLEDGES THAT HE/SHE HAS CAREFULLY READ THIS AGREEMENT AND UNDERSTANDS AND AGREES TO ALL OF THE PROVISIONS IN THIS AGREEMENT.

CATABASIS PHARMACEUTICALS, INC.

Date: _____ By: _____

Date: _____ _____

(Signature)

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AND PURSUANT TO THE PROVISIONS OF ARTICLE 5 BELOW, MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND APPLICABLE STATE SECURITIES LAW, OR SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION CAN BE MADE IN COMPLIANCE WITH RULE 144 OF THE ACT, OR IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE REASONABLY SATISFACTORY TO THE ISSUER OF THESE SECURITIES, SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION IS EXEMPT FROM REGISTRATION.

WARRANT TO PURCHASE STOCK

Company:	CATABASIS PHARMACEUTICALS, INC., a Delaware corporation
Number of Shares:	47,353 (Subject to adjustment as hereinafter provided)
Class of Stock:	Series B Preferred Stock
Warrant Price:	$0.9503 per Share (Subject to adjustment as hereinafter provided)
Issue Date:	August 27, 2014
Expiration Date:	The earlier to occur of the (i) expiration of this Warrant pursuant to Article 1.6 hereof or (ii) 7th anniversary after the Issue Date
Credit Facility:	This Warrant is issued in connection with the Credit and Security Agreement, dated as of August 27, 2014, among the Company, Midcap Financial SBIC, LP, a Delaware limited partnership, and such other lenders from time to time party thereto, as amended, restated, supplemented or otherwise modified from time to time (the "Credit Agreement").

THIS WARRANT TO PURCHASE STOCK (this "Warrant") CERTIFIES THAT, for good and valuable consideration, including without limitation the mutual promises contained in the Credit Agreement (defined above), SQUARE 1 BANK, a North Carolina banking corporation (together with any registered holder from time to time of this Warrant or any holder of the Shares issuable or issued upon exercise of this Warrant, "Holder") is entitled to purchase the number of fully paid and nonassessable shares of the class and series of capital stock of the Company at the Warrant Price, all as set forth above or herein below and as adjusted pursuant to the terms of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant. As used herein, "Share" or "Shares" shall refer to either (i) the shares of stock issuable upon the exercise or conversion of this Warrant and any shares of capital stock into which such shares may be converted or exchanged, or (ii) the authorized or issued and outstanding shares of capital stock of the Company which are of the same class and series as the shares of stock issuable upon the exercise or conversion of this Warrant, in either case as the specific provisions of this Warrant or the context may require.

ARTICLE 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering a duly completed and executed Notice of Exercise in substantially the form attached as Appendix 1 to the principal office of the Company. Unless Holder is exercising the conversion right set forth in Section 1.2, Holder shall also deliver to the Company a check, wire transfer (to an account designated by the Company), or other

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form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

1.2 Conversion Right. In lieu of exercising this Warrant as specified in Article 1.1, Holder may at any time and from time to time after the Issue Date convert this Warrant, in whole or in part, into a number of Shares determined by dividing (a) the aggregate fair market value of the number of Shares or the securities otherwise issuable upon exercise of this Warrant with respect to which Holder elects to convert this Warrant minus the aggregate Warrant Price of such Shares by (b) the fair market value of one Share. The "fair market value" of the Shares shall be determined pursuant to Section 1.3.

1.3 Fair Market Value. If the Company's common stock is traded in a public market and the Shares are common stock, the fair market value of each Share shall be the closing price of a Share reported for the business day immediately before Holder delivers its Notice of Exercise to the Company (or in the instance where the Warrant is exercised immediately prior to the effectiveness of the Company's initial public offering of its common stock ("IPO"), the "price to public" per share price specified in the final prospectus relating to such offering). If the Company's common stock is traded in a public market and the Shares are preferred stock, the fair market value of each Share shall be the closing price of such common stock reported for the business day immediately before Holder delivers its Notice of Exercise to the Company (or in the instance where the Warrant is exercised immediately prior to the effectiveness of an IPO, the initial "price to public" per share price specified in the final prospectus relating to the IPO), in either case, multiplied by the number of shares of the Company's common stock into which a Share is then convertible. In the event of an exercise in connection with an Acquisition, the fair market value of a Share shall be the value to be received per Share by all holders of such Shares in such transaction. If the Company's common stock is not traded in a public market and other than in the event of an exercise in connection with an Acquisition, the Board of Directors of the Company shall determine the fair market value in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Promptly after Holder exercises or converts this Warrant pursuant to Article 1.1 or 1.2, respectively, and, if applicable, the Company receives payment of the aggregate Warrant Price, the Company shall promptly deliver to Holder certificates for the Shares acquired and, if this Warrant has not been fully exercised or converted and has not expired, a new Warrant of like tenor representing the Shares not so acquired. This Warrant shall be deemed to have been exercised and such certificates deemed issued, and Holder shall become the holder of record of the Shares for all purposes, as of 5:00 p.m. (Eastern Time) on the date of Holder's delivery of the exercise notice pursuant to Article 1.1 and payment of the Warrant Price, if applicable. If an exercise or conversion is to be made in connection with an IPO or Acquisition, such exercise may at the election of Holder be conditioned upon the consummation of such transaction, in which case such exercise shall not be deemed to be effective until immediately prior to the consummation of such transaction.

1.5 Replacement of Warrants. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form and amount to the Company or, in the case of mutilation on surrender and cancellation of this Warrant, the Company shall execute and deliver, in lieu of this Warrant, a new warrant of like tenor.

1.6 Treatment of Warrant Upon Acquisition of the Company.

1.6.1 "Acquisition". For the purpose of this Warrant, "Acquisition" means (a) any sale, license, or other disposition, in each case, of all or substantially all of the assets of the Company, or (b) any reorganization, consolidation, share exchange or merger of the Company with or into another person or entity, or sale of outstanding securities of the Company by the holders thereof, in each case where the holders of the Company's securities before the transaction beneficially own less than fifty percent (50%) of the outstanding voting securities of the successor, acquiring or surviving person or entity after the transaction.

1.6.2 Treatment of Warrant Upon Acquisition.

A) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition that (i) is not described in Section 1.6.1(a), (ii) in which the sole consideration is cash, and (iii) in connection with or as a result of which all holders of the Shares are or have the right to receive solely cash in the same proportions in respect of all of their Shares, then either (a) Holder shall exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such Acquisition, or (b) if Holder elects not to exercise the Warrant, this Warrant will expire upon the consummation of such Acquisition, subject to Section 5.8. The Company shall provide Holder with written notice of its request relating to the foregoing (together with such reasonable information as Holder may reasonably request in connection with such contemplated Acquisition giving rise to such notice), which notice is to be delivered to Holder not less than ten (10) days prior to the closing of the proposed Acquisition.

B) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition that is described in Section 1.6.1(a) and is an "arms'-length" transaction with a third party that is not an Affiliate (as defined below) of the Company (a "True Asset Sale"), Holder may (a) exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such True Asset Sale, (b) permit this Warrant to continue until the earlier of the Expiration Date or the dissolution and/or liquidation of the Company following the closing of any such True Asset Sale, subject to Section 5.8, or (c) elect to have the terms of Section 1.6.2(D) below apply. The Company shall provide Holder with written notice of its request relating to the foregoing (together with such reasonable information as Holder may request in connection with such contemplated Acquisition giving rise to such notice), which notice is to be delivered to Holder not less than ten (10) days prior to the closing of the proposed True Asset Sale.

C) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition (i) in which the consideration is a combination of cash and equity securities of the acquirer listed for trading on a U.S. national securities exchange and which may be freely resold pursuant to a resale registration statement or under Rule 144 of the Act without any restriction or limitation (including without limitation volume and manner of sale restrictions), (ii) in connection with or as a result of which all holders of the Shares are or have the right to receive solely cash and/or such securities in the same proportions in respect of all of their Shares, and (iii) on the record date for which the fair market value of one Share (or other securities issuable upon exercise of this Warrant) is greater than the Warrant Price, Holder may (a) exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such Acquisition, or (b) if Holder elects not to exercise the Warrant, this Warrant will expire upon the consummation of such Acquisition, subject to Section 5.8.

D) Upon the closing of any Acquisition other than those particularly described in subsections (A), (B) and (C) above (or in the case of an Acquisition described in Section 1.6.2(B) above if Holder elects to have the terms of this Section 1.6.2(D) apply), the successor, surviving or acquiring entity shall assume in writing the obligations of this Warrant, including agreements to deliver to Holder in exchange for this Warrant a written instrument issued by the successor, surviving or acquiring entity pursuant to which this Warrant shall thereafter be exercisable for the kind, amount and value of securities, cash, and property as would have been payable for the Shares issuable upon exercise of the unexercised portion of this Warrant had such Shares been outstanding on the record date for the Acquisition and subsequent closing. The Warrant Price and/or number of Shares shall be adjusted accordingly.

E) Conditional Exercise. Notwithstanding any other provision hereof, if an exercise of this Warrant is to be made in connection with an Acquisition, such exercise may at the election of Holder be conditioned upon the consummation of such transaction, in which case such exercise shall not be deemed to be effective until immediately prior to the consummation of such transaction.

As used herein "Affiliate" shall mean any person or entity that controls, is controlled by or is under common control with any such person or entity, and each of such person's or entity's officers, directors, members, managers, joint venturers or partners, as applicable (whether as a result of the ownership of voting securities, by contract or otherwise).

1.7 [Omitted]

1.8 Replacement Warrants. Holder shall have the right, in its sole and absolute discretion, to cause the Company to exchange this Warrant for a new warrant having substantially similar terms to purchase shares of Senior Preferred Stock as defined in, and subject to the terms and conditions of, the Credit Agreement, and all such terms contained in the Credit Agreement are incorporated by reference herein whether or not the Credit Agreement remains in effect.

ARTICLE 2. ADJUSTMENTS TO THE SHARES.

2.1 Stock Dividends, Subdivisions and Combinations. If the Company declares or pays a dividend on the Shares payable in common stock or other securities, then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without cost to Holder, the total number and kind of securities to which Holder would have been entitled had Holder owned the Shares of record as of the date the dividend occurred. If the Company subdivides the Shares by reclassification, stock split, split up or otherwise into a greater number of shares or takes any other action which increases the number of shares of any class or series of capital stock into which the Shares are convertible, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding Shares are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any reclassification, exchange, substitution, reorganization, merger, consolidation or other event that results in a change of the number and/or class of the underlying securities as to which purchase rights under this Warrant exist, Holder shall be entitled to receive, upon exercise or conversion of this Warrant, the number, amount and kind of securities, money and property that Holder

would have ultimately received upon the completion of such reclassification, exchange, substitution, reorganization, merger, consolidation or other event if this Warrant had been exercised immediately before such reclassification, exchange, substitution, reorganization, merger, consolidation or other event. Such an event shall include any automatic conversion of the outstanding or issuable securities of the Company of the same class or series as the Shares to common stock pursuant to the terms of the Company's Certificate of Incorporation (the "Certificate"). The Company or its successor shall promptly issue to Holder an amendment to this Warrant setting forth the number and kind of such new securities or other property issuable upon exercise or conversion of this Warrant as a result of such reclassification, exchange, substitution, reorganization, merger, consolidation or other event that results in a change of the number and/or class of securities issuable upon exercise or conversion of this Warrant. The amendment to this Warrant shall provide for adjustments which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Article 2 including, without limitation, adjustments to the Warrant Price and to the number of securities or property issuable upon exercise of the new Warrant. The provisions of this Article 2.2 shall similarly apply to successive reclassifications, exchanges, substitutions, reorganizations, mergers, consolidations or other events.

2.3 Adjustments for Diluting Issuances. The Warrant Price and the number of Shares issuable upon exercise of this Warrant, and the number of shares of common stock or other securities issuable upon conversion of the Shares, shall be subject to adjustment, from time to time in the manner set forth in the Certificate as if the Shares were issued and outstanding on and as of the date of any such required adjustment. The provisions set forth for the Shares in the Certificate relating to the above in effect as of the Issue Date may not be amended, modified or waived, without the prior written consent of Holder unless such amendment, modification or waiver affects the rights associated with the Shares in the same manner as such amendment, modification or waiver affects the rights associated with all other shares of the same series and class as the Shares.

2.4 No Impairment. Without the prior written consent of Holder, the Company shall not, by amendment of the Certificate, the Stockholder's Agreement or its by-laws, or through any reorganization, recapitalization, share exchange, transfer of assets, consolidation, merger, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and shall at all times in good faith assist in carrying out of all such terms and in taking all such action as may be necessary or appropriate to protect Holder's rights against such avoidance or impairment.

2.5 Fractional Shares. No fractional Shares shall be issuable upon exercise or conversion of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional share interest arises upon any exercise or conversion of the Warrant, the Company shall eliminate such fractional share interest by paying Holder the amount computed by multiplying the fractional interest by the fair market value of a full Share.

2.6 Certificate as to Adjustments. Upon each adjustment of the Warrant Price or the kind or number of securities issuable under this Warrant pursuant to this Article 2, the Company shall promptly notify Holder in writing, and, at the Company's expense, promptly compute such adjustment, and furnish Holder with a certificate of its Chief Executive Officer, Corporate Secretary or a senior financial officer setting forth such adjustment and the facts upon which such adjustment is based. The Company shall, upon written request, furnish Holder a certificate setting forth the Warrant Price and the number and kind of securities issuable under

this Warrant in effect upon the date thereof and the series of adjustments leading to such Warrant Price and such number and kind of securities.

ARTICLE 3. REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants and covenants to Holder as follows:

(a) The Company has all requisite legal and corporate power and authority, and has taken all corporate action on the part of itself, its officers, directors and stockholders necessary, to execute, issue and deliver this Warrant, to issue the Shares issuable upon exercise or conversion of this Warrant and the securities issuable upon conversion of the Shares, and to carry out and perform its obligations under this Warrant, and this Warrant constitutes the legally binding and valid obligation of the Company enforceable in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, or similar laws relating to or affecting the enforcement of creditors' rights, or to principles of equity.

(b) This Warrant has been validly issued and is free of restrictions on transfer other than restrictions on transfer set forth herein and under applicable state and federal securities laws. All Shares which may be issued upon the exercise of the purchase or conversion right represented by this Warrant, and all securities, if any, issuable upon conversion of the Shares, shall, upon issuance, be duly authorized, validly issued, fully paid and nonassessable, and free of any liens and encumbrances (including preemptive or other similar rights) except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

(c) The execution, delivery, and performance of this Warrant will not result in a violation of, be in conflict with, or constitute a default under, with or without the passage of time or giving of notice, any provision of the Certificate, the Stockholder's Agreement (as defined in Section 3.3) or the Company's by-laws, any provision of any judgment, decree, or order to which the Company is a party, by which it is bound, or to which any of its material assets are subject, any contract, obligation, or commitment to which the Company is a party or by which it is bound, or any statute, rule, or governmental regulation applicable to the Company, or the creation of any lien, charge, or encumbrance upon any assets of the Company.

(d) The Company has provided Holder with a capitalization table of the Company, and such capitalization table is complete and accurate as of the date hereof and reflects all outstanding capital stock of the Company and all outstanding warrants, options, conversion privileges, preemptive rights and other rights or agreements to purchase or otherwise acquire or issued any equity securities or convertible debt securities of the Company. The Company has reserved a sufficient number of Shares for issuance upon the exercise of this Warrant and a sufficient number of shares of the securities issuable upon conversion of the Shares.

(e) The Warrant Price is no greater than the lowest price at which the Company has issued Series B Preferred Stock.

3.2 Notice of Certain Events; Information. If the Company proposes at any time (a) to declare any dividend or distribution upon any of its stock, whether in cash, property,

stock, or other securities and whether or not a regular cash dividend; (b) to effect any reclassification or recapitalization of any of its stock; (c) to merge or consolidate with or into any other corporation, or sell, lease, license, or convey all or substantially all of its assets, (d) to approve or participate in any Acquisition or an IPO, (e) to liquidate, dissolve or wind up, or (f) to take any action or to effect any transaction which requires the Company to provide notice to other holders of the Shares, then, in connection with each such event, the Company shall give Holder: (1) at least ten (10) days prior written notice of the date on which a record will be taken for such dividend or distribution (and specifying the date on which the holders of stock will be entitled thereto) or for determining rights to vote, if any, in respect of the matters referred to in (a) above; and (2) in the case of the matters referred to in (b), (c), (d), (e) or (f) above, at least ten (10) days prior written notice of the date when the same will take place (and, if applicable, specifying the date on which the holders of stock will be entitled to exchange their common stock for securities or other property deliverable upon the occurrence of such event). The Company will also use commercially reasonable efforts to provide such information in its possession as is requested by Holder and as is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements, including without limitation, a capitalization table, to be provided to Holder within thirty (30) days after the end of each fiscal quarter of the Company, and including the per share price of the Company's equity securities most recently issued prior to the date such capitalization table and indication are so provided; provided, that the Company's obligations set forth in this sentence shall terminate immediately prior to the Company's IPO.

3.3 Stockholder's Agreement; No Other Stockholder Rights. Except as provided in this Warrant and subject to the following provisions of this Section 3.3, Holder will not have any rights as a stockholder of the Company until the exercise of this Warrant. Effective upon any exercise or conversion of this Warrant, Holder and any permitted transferee of the Warrant or the Shares shall be entitled to all of the rights and benefits provided to all other holders of the Shares pursuant to, and the Company and Holder agree that Holder (and any permitted transferee of the Warrant or the Shares) will execute a counterpart signature page and become a party to (a) the Amended and Restated Investors' Rights Agreement dated as of October 31, 2013 by and among the Company and certain of its stockholders (as the same may be amended and/or restated from time to time the "Stockholder's Agreement"), provided that no such amendment shall in any respect restrict Holder's or such permitted transferee's right and ability to transfer this Warrant or the Shares to any affiliate of Holder or such permitted transferee and (b) provided Holder or any permitted transferee agrees to become a party to any such agreement entered into hereafter (such agreement not to be unreasonably withheld), any agreement to which holders of the Shares may hereafter become parties and the Shares may become bound (including, without limitation, any stockholders, investor rights, registration rights, right of refusal, voting and co-sale rights or similar agreement); and provided, that (v) Holder and any permitted transferee shall have all of the rights of each other holder of shares under the Stockholder's Agreement without regard to any applicable minimum share ownership or other requirement on which such rights are conditioned (excluding any observer rights under Section 3.3 of the Stockholder's Agreement), (w) with respect to Holder and its permitted transferees and assigns, notwithstanding any term or restriction on transfer contained in the Stockholder's Agreement, Holder and its permitted transferees shall have the unrestricted right to transfer all or any portion of the Shares to any assignee of or purchaser from Holder or its affiliate of their rights under the Credit Agreement (to the extent permitted by the Credit Agreement) or any interest or participation therein, (x) Holder and its permitted transferees may transfer its rights under the Stockholder's Agreement to any affiliate of Holder or any assignee of or purchaser from Holder or its affiliates of their rights under the Credit Agreement (to the extent permitted by the Credit Agreement) or any interest or participation therein, (y) Holder and its permitted

transferees shall have any purchase, participation, preemptive and registration rights granted to any other holders of the Shares under the Stockholder's Agreement, and (z) in the event any term, restriction or condition of the Stockholder's Agreement or any such agreement conflicts with, is inconsistent with or would otherwise prohibit or restrict the exercise of any right of Holder under this Warrant, the terms of this Warrant shall control and this Warrant and Holder shall not be subject to such term, restriction or condition. As an illustration and not by way of limitation as to the purpose and intent of this Section 3.3, the Company shall grant registration rights to Holder for any Shares acquired by Holder upon exercise or conversion of this Warrant or conversion of such Shares in parity to the registration rights granted to any other holder of the Shares party to the Stockholder's Agreement.

ARTICLE 4. REPRESENTATIONS AND WARRANTIES OF HOLDER. Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the securities to be acquired upon exercise of this Warrant by Holder will be acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act and Holder has no present intention of selling or engaging in any public distribution of the same except pursuant to a registration or exemption. Holder also represents that Holder has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise or conversion hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise or conversion hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state

securities laws, or unless exemption from such registration and qualification are otherwise available.

4.6 Market Stand-Off. Holder hereby agrees that, in connection with the Company's IPO it shall not to the extent requested by the Company's underwriter(s) sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company (other than any disposed of in the registration and those acquired by Holder in the IPO or thereafter in open market transactions, or any disposed of in a private

transaction to a transferee who agrees to be bound by the terms of this Section 4.6) for up to 180 days from the effective date of the registration statement filed in connection with the IPO; provided, however, that such 180 day period may be extended to the extent necessary to permit any managing underwriter to comply with NASD Rule 2711(f)(4); provided further, however, that Holder shall not be bound by the restrictions set forth in this Section 4.6 unless all five percent stockholders of the Company also agree to such restrictions; and provided, further, that any discretionary waiver or termination of the foregoing restrictions by the Company or the underwriters shall apply to all holders of the Company's equity securities subject to such restrictions pro rata based on the number of shares subject to such restrictions, Holder agrees to enter into the form of agreement as reasonably requested by the underwriter(s) in connection with this Section 4.6.

ARTICLE 5. MISCELLANEOUS.

5.1 Term. This Warrant is exercisable in whole or in part at any time and from time to time on or before the Expiration Date. The conditions under which the Warrant shall automatically convert on the Expiration Date are set forth in Section 5.8 below.

5.2 Legends.

(a) This Warrant and the Shares (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) shall be imprinted with a legend in substantially the following form:

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT PURSUANT TO THE PROVISIONS OF ARTICLE 5, MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED UNLESS REGISTERED UNDER SAID ACT AND APPLICABLE STATE SECURITIES LAW, OR UNLESS SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION CAN BE MADE IN COMPLIANCE WITH RULE 144 OF THE ACT, OR UNLESS, IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE REASONABLY SATISFACTORY TO THE ISSUER OF THESE SECURITIES, SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION IS EXEMPT FROM REGISTRATION.

THE SECURITIES EVIDENCED BY THIS CERTIFICATE ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE, INCLUDING A MARKET STAND-OFF PERIOD OF UP TO 180 DAYS IN THE EVENT OF A PUBLIC OFFERING, OR FOR A LONGER PERIOD NOT TO EXCEED 34 DAYS IF THE ISSUER'S TRANSFER AGENT IS NOTIFIED BY THE ISSUER OR THE ISSUER'S COUNSEL THAT THIS MARKET STAND-OFF RESTRICTION HAS

BEEN EXTENDED FOR THE PURPOSE OF COMPLYING WITH NASD RULE 2711(F)(4).

(b) Notwithstanding the foregoing, neither this Warrant nor any certificate or instrument evidencing this Warrant or the Shares shall bear, and the Company hereby agrees to remove, within ten (10) days of any written request (together with such evidence or documentation described in the following provisions) by Holder, pursuant to the following provisions of this Section 5.2(b), or not to affix, as applicable, any restrictive or other legend, notice or provision restricting the sale or transfer of this Warrant or the Shares, in each case provided that Holder has provided reasonable evidence to the Company (including any customary broker's or transferring stockholder's letters but expressly excluding an opinion of counsel other than with respect to clause (D) below) that: (A) a transfer of this Warrant or the Shares, as applicable, has been made pursuant to SEC Rule 144 (assuming the transferor is not an "affiliate" (as defined in SEC Rule 144) of the Company); (B) the Warrant or the Shares, as applicable, are then eligible for transfer pursuant to SEC Rule 144; (C) a transfer of this Warrant or the Shares has been made for no consideration to an affiliate of Holder or has otherwise been made to any affiliate of Holder who is an "accredited investor" as defined in Regulation D promulgated under the Act, and that is otherwise in compliance with all applicable securities laws; or (D) in connection with any other sale or transfer, provided that upon the request of the Company, such Holder provides the Company with an opinion of counsel to such Holder, in a reasonably acceptable form to the Company, to the effect that either such sale or transfer may be made without registration under the applicable requirements of the Act or that such a legend, notice or provision is not required by, and is not required in order to establish compliance with any provisions of, the Act. For all purposes of Section 1.4, the Company shall not be deemed to have delivered to Holder Shares unless and until the Company shall have fully complied with all of the terms and conditions of this Section 5.2(b) (if removal has been requested by Holder in compliance with this Section 5.2(b)).

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) may not be transferred or assigned in whole or in part without compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and, subject to Section 5.2(b), legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to an affiliate of Holder. Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144.

5.4 Transfer Procedure. Subject to the provisions of Article 5.3 and upon and effective immediately as of providing the Company with written notice substantially in the form attached as Appendix 2, Holder and any permitted transferee may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant (or the Shares issuable directly or indirectly, upon conversion of the Shares, if any) to any transferee, provided, however, in connection with any such transfer, Holder or such transferee will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and, in the case of transfer to transferee who is not an affiliate of the Holder, Holder or such transferee promptly thereafter surrenders this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable). The Company may refuse to transfer this Warrant or the Shares to any person who directly competes with the Company, unless, in either case, the stock of the Company is publicly traded.

5.5 Notices. All notices, requests, documents and other communications (collectively, "Notices") from the Company to Holder, or vice versa, shall be in writing and deemed validly delivered effective as of the earliest to occur of (a) when actually received, (b) when transmitted by facsimile or electronic mail (PDF), (c) the first business day after mailing by first-class registered or certified mail, postage prepaid, or after deposit with a reputable overnight courier with all charges paid, in each case other than actual receipt at such mailing, facsimile or electronic mail address as may have been furnished to the Company or Holder, as the case may be. As used in this Warrant, "business days" shall refer to all days other than any Saturday, Sunday or day on which the Company's primary depository bank is closed. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

SQUARE 1 BANK

406 Blackwell Street, Suite 240
Crowe Building
Durham, NC 27701
Attn: Warrant Administrator

With a copy to:

SQUARE 1 BANK
890 Winter Street, Suite 110
Waltham, MA 02451
Attn: David Kho, AVP
Email: dkho@square1bank.com

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

CATABASIS PHARMACEUTICALS, INC.
One Kendall Square, Suite B14202
Cambridge, MA 02139
Attention: Ian Sanderson, CFO
Fax:
E-Mail:

With a copy to:

WilmerHale
60 State Street
Boston, MA 02109 USA
Attention: Jamie N. Class
Fax: (617) 526-5000
E-Mail: jamie.class@wilmerhale.com

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorneys' Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be

entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees.

5.8 Automatic Conversion upon Expiration. Unless Holder notifies the Company in writing to the contrary prior to such automatic conversion, in the event that, upon the earliest to occur of the Expiration Date or any expiration, involuntary termination or cancellation of this Warrant, the fair market value of one Share as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed as of immediately before such date to have been converted pursuant to Section 1.2 above as to all Shares for which it shall not previously have been exercised or converted, and the Company shall promptly deliver a certificate representing the Shares issued upon such conversion to the Holder.

5.9 Counterparts. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement.

5.10 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of Delaware without giving effect to its principles regarding conflicts of law.

5.11 Headings. The various headings in this Warrant are inserted for convenience only and shall not affect the meaning or interpretation of this Warrant or any provisions hereof.

5.12 Severability. In the event any one or more of the provisions of this Warrant shall for any reason be held invalid, illegal or unenforceable, the remaining provisions of this Warrant shall be unimpaired, and the invalid, illegal or unenforceable provision shall be replaced by a mutually acceptable valid, legal and enforceable provision.

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"COMPANY" Date: August 27, 2014

CATABASIS PHARMACEUTICALS, INC.

By: /s/ Ian Sanderson

Name: Ian Sanderson
Title: Chief Financial Officer and Treasurer

"HOLDER"

SQUARE 1 BANK

By: Square 1 Bank

By: /s/ Evan Travis

Name: Evan Travis
Title: Vice President

APPENDIX 1

NOTICE OF EXERCISE

1. Holder elects to purchase shares of the [Preferred/Common] Stock of CATABASIS PHARMACEUTICALS, INC. pursuant to the terms of the attached Warrant, and tenders payment of the purchase price of the shares in full.

[or]

1. Holder elects to convert the attached Warrant into Shares/cash [strike one] in the manner specified in the Warrant. This conversion is exercised for of the Shares covered by the Warrant.

[Strike paragraph that does not apply.]

2. Please issue a certificate or certificates representing the shares in the name specified below:

Holder's Name

(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Article 4 of the Warrant as the date hereof.

HOLDER:

By: _____ (SEAL)

Name: _____

Title: _____

(Date): _____

APPENDIX 2

ASSIGNMENT

For value received, SQUARE 1 BANK hereby sells, assigns and transfers unto

Name:

Address:

Tax ID:

that certain Warrant to Purchase Stock issued by CATABASIS PHARMACEUTICALS, INC. (the "Company"), on August 27, 2014 (the "Warrant") together with all rights, title and interest therein.

HOLDER:

SQUARE 1 BANK

By: _____ (SEAL)

Name: _____

Title: _____

Date: _____

By its execution below, and for the benefit of the Company, _____ makes each of the representations and warranties set forth in Article 4 of the Warrant and agrees to all other provisions of the Warrant as of the date hereof.

[NAME OF TRANSFEREE]

By: _____ (SEAL)

Name: _____

Title: _____

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AND PURSUANT TO THE PROVISIONS OF ARTICLE 5 BELOW, MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND APPLICABLE STATE SECURITIES LAW, OR SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION CAN BE MADE IN COMPLIANCE WITH RULE 144 OF THE ACT, OR IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE REASONABLY SATISFACTORY TO THE ISSUER OF THESE SECURITIES, SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION IS EXEMPT FROM REGISTRATION.

WARRANT TO PURCHASE STOCK

Company:	CATABASIS PHARMACEUTICALS, INC., a Delaware corporation
Number of Shares:	110,491 (Subject to adjustment as hereinafter provided)
Class of Stock:	Series B Preferred Stock
Warrant Price:	$0.9503 per Share (Subject to adjustment as hereinafter provided)
Issue Date:	August 27, 2014
Expiration Date:	The earlier to occur of the (i) expiration of this Warrant pursuant to Article 1.6 hereof or (ii) 7th anniversary after the Issue Date
Credit Facility:	This Warrant is issued in connection with the Credit and Security Agreement, dated as of August 27, 2014, among the Company, Midcap Financial SBIC, LP, a Delaware limited partnership, and such other lenders from time to time party thereto, as amended, restated, supplemented or otherwise modified from time to time (the "Credit Agreement").

THIS WARRANT TO PURCHASE STOCK (this "Warrant") CERTIFIES THAT, for good and valuable consideration, including without limitation the mutual promises contained in the Credit Agreement (defined above), MIDCAP FINANCIAL SBIC, LP, a Delaware limited partnership (together with any registered holder from time to time of this Warrant or any holder of the Shares issuable or issued upon exercise of this Warrant, "Holder") is entitled to purchase the number of fully paid and nonassessable shares of the class and series of capital stock of the Company at the Warrant Price, all as set forth above or herein below and as adjusted pursuant to the terms of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant. As used herein, "Share" or "Shares" shall refer to either (i) the shares of stock issuable upon the exercise or conversion of this Warrant and any shares of capital stock into which such shares may be converted or exchanged, or (ii) the authorized or issued and outstanding shares of capital stock of the Company which are of the same class and series as the shares of stock issuable upon the exercise or conversion of this Warrant, in either case as the specific provisions of this Warrant or the context may require.

ARTICLE 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering a duly completed and executed Notice of Exercise in substantially the form attached as Appendix 1 to the principal office of the Company. Unless Holder is exercising the conversion right set forth in Section 1.2, Holder shall also deliver to the Company a check, wire transfer (to an account designated by the Company), or other

form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

1.2 Conversion Right. In lieu of exercising this Warrant as specified in Article 1.1, Holder may at any time and from time to time after the Issue Date convert this Warrant, in whole or in part, into a number of Shares determined by dividing (a) the aggregate fair market value of the number of Shares or the securities otherwise issuable upon exercise of this Warrant with respect to which Holder elects to convert this Warrant minus the aggregate Warrant Price of such Shares by (b) the fair market value of one Share. The "fair market value" of the Shares shall be determined pursuant to Section 1.3.

1.3 Fair Market Value. If the Company's common stock is traded in a public market and the Shares are common stock, the fair market value of each Share shall be the closing price of a Share reported for the business day immediately before Holder delivers its Notice of Exercise to the Company (or in the instance where the Warrant is exercised immediately prior to the effectiveness of the Company's initial public offering of its common stock ("IPO"), the "price to public" per share price specified in the final prospectus relating to such offering). If the Company's common stock is traded in a public market and the Shares are preferred stock, the fair market value of each Share shall be the closing price of such common stock reported for the business day immediately before Holder delivers its Notice of Exercise to the Company (or in the instance where the Warrant is exercised immediately prior to the effectiveness of an IPO, the initial "price to public" per share price specified in the final prospectus relating to the IPO), in either case, multiplied by the number of shares of the Company's common stock into which a Share is then convertible. In the event of an exercise in connection with an Acquisition, the fair market value of a Share shall be the value to be received per Share by all holders of such Shares in such transaction. If the Company's common stock is not traded in a public market and other than in the event of an exercise in connection with an Acquisition, the Board of Directors of the Company shall determine the fair market value in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Promptly after Holder exercises or converts this Warrant pursuant to Article 1.1 or 1.2, respectively, and, if applicable, the Company receives payment of the aggregate Warrant Price, the Company shall promptly deliver to Holder certificates for the Shares acquired and, if this Warrant has not been fully exercised or converted and has not expired, a new Warrant of like tenor representing the Shares not so acquired. This Warrant shall be deemed to have been exercised and such certificates deemed issued, and Holder shall become the holder of record of the Shares for all purposes, as of 5:00 p.m. (Eastern Time) on the date of Holder's delivery of the exercise notice pursuant to Article 1.1 and payment of the Warrant Price, if applicable. If an exercise or conversion is to be made in connection with an IPO or Acquisition, such exercise may at the election of Holder be conditioned upon the consummation of such transaction, in which case such exercise shall not be deemed to be effective until immediately prior to the consummation of such transaction.

1.5 Replacement of Warrants. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form and amount to the Company or, in the case of mutilation on surrender and cancellation of this Warrant, the Company shall execute and deliver, in lieu of this Warrant, a new warrant of like tenor.

1.6 Treatment of Warrant Upon Acquisition of the Company.

1.6.1 "Acquisition". For the purpose of this Warrant, "Acquisition" means (a) any sale, license, or other disposition, in each case, of all or substantially all of the assets of the Company, or (b) any reorganization, consolidation, share exchange or merger of the Company with or into another person or entity, or sale of outstanding securities of the Company by the holders thereof, in each case where the holders of the Company's securities before the transaction beneficially own less than fifty percent (50%) of the outstanding voting securities of the successor, acquiring or surviving person or entity after the transaction.

1.6.2 Treatment of Warrant Upon Acquisition.

A) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition that (i) is not described in Section 1.6.1(a), (ii) in which the sole consideration is cash, and (iii) in connection with or as a result of which all holders of the Shares are or have the right to receive solely cash in the same proportions in respect of all of their Shares, then either (a) Holder shall exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such Acquisition, or (b) if Holder elects not to exercise the Warrant, this Warrant will expire upon the consummation of such Acquisition, subject to Section 5.8. The Company shall provide Holder with written notice of its request relating to the foregoing (together with such reasonable information as Holder may reasonably request in connection with such contemplated Acquisition giving rise to such notice), which notice is to be delivered to Holder not less than ten (10) days prior to the closing of the proposed Acquisition.

B) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition that is described in Section 1.6.1(a) and is an "arms'-length" transaction with a third party that is not an Affiliate (as defined below) of the Company (a "True Asset Sale"), Holder may (a) exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such True Asset Sale, (b) permit this Warrant to continue until the earlier of the Expiration Date or the dissolution and/or liquidation of the Company following the closing of any such True Asset Sale, subject to Section 5.8, or (c) elect to have the terms of Section 1.6.2(D) below apply. The Company shall provide Holder with written notice of its request relating to the foregoing (together with such reasonable information as Holder may request in connection with such contemplated Acquisition giving rise to such notice), which notice is to be delivered to Holder not less than ten (10) days prior to the closing of the proposed True Asset Sale.

C) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition (i) in which the consideration is a combination of cash and equity securities of the acquirer listed for trading on a U.S. national securities exchange and which may be freely resold pursuant to a resale registration statement or under Rule 144 of the Act without any restriction or limitation (including without limitation volume and manner of sale restrictions), (ii) in connection with or as a result of which all holders of the Shares are or have the right to receive solely cash and/or such securities in the same proportions in respect of all of their Shares, and (iii) on the record date for which the fair market value of one Share (or other securities issuable upon exercise of this Warrant) is greater than the Warrant Price, Holder may (a) exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such Acquisition, or (b) if Holder elects not to exercise the Warrant, this Warrant will expire upon the consummation of such Acquisition, subject to Section 5.8.

D) Upon the closing of any Acquisition other than those particularly described in subsections (A), (B) and (C) above (or in the case of an Acquisition described in Section 1.6.2(B) above if Holder elects to have the terms of this Section 1.6.2(D) apply), the successor, surviving or acquiring entity shall assume in writing the obligations of this Warrant, including agreements to deliver to Holder in exchange for this Warrant a written instrument issued by the successor, surviving or acquiring entity pursuant to which this Warrant shall thereafter be exercisable for the kind, amount and value of securities, cash, and property as would have been payable for the Shares issuable upon exercise of the unexercised portion of this Warrant had such Shares been outstanding on the record date for the Acquisition and subsequent closing. The Warrant Price and/or number of Shares shall be adjusted accordingly.

E) Conditional Exercise. Notwithstanding any other provision hereof, if an exercise of this Warrant is to be made in connection with an Acquisition, such exercise may at the election of Holder be conditioned upon the consummation of such transaction, in which case such exercise shall not be deemed to be effective until immediately prior to the consummation of such transaction.

As used herein "Affiliate" shall mean any person or entity that controls, is controlled by or is under common control with any such person or entity, and each of such person's or entity's officers, directors, members, managers, joint venturers or partners, as applicable (whether as a result of the ownership of voting securities, by contract or otherwise).

1.7 [Omitted]

1.8 Replacement Warrants. Holder shall have the right, in its sole and absolute discretion, to cause the Company to exchange this Warrant for a new warrant having substantially similar terms to purchase shares of Senior Preferred Stock as defined in, and subject to the terms and conditions of, the Credit Agreement, and all such terms contained in the Credit Agreement are incorporated by reference herein whether or not the Credit Agreement remains in effect.

ARTICLE 2. ADJUSTMENTS TO THE SHARES.

2.1 Stock Dividends, Subdivisions and Combinations. If the Company declares or pays a dividend on the Shares payable in common stock or other securities, then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without cost to Holder, the total number and kind of securities to which Holder would have been entitled had Holder owned the Shares of record as of the date the dividend occurred. If the Company subdivides the Shares by reclassification, stock split, split up or otherwise into a greater number of shares or takes any other action which increases the number of shares of any class or series of capital stock into which the Shares are convertible, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding Shares are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any reclassification, exchange, substitution, reorganization, merger, consolidation or other event that results in a change of the number and/or class of the underlying securities as to which purchase rights under this Warrant exist, Holder shall be entitled to receive, upon exercise or conversion of this Warrant, the number, amount and kind of securities, money and property that Holder

would have ultimately received upon the completion of such reclassification, exchange, substitution, reorganization, merger, consolidation or other event if this Warrant had been exercised immediately before such reclassification, exchange, substitution, reorganization, merger, consolidation or other event. Such an event shall include any automatic conversion of the outstanding or issuable securities of the Company of the same class or series as the Shares to common stock pursuant to the terms of the Company's Certificate of Incorporation (the "Certificate"). The Company or its successor shall promptly issue to Holder an amendment to this Warrant setting forth the number and kind of such new securities or other property issuable upon exercise or conversion of this Warrant as a result of such reclassification, exchange, substitution, reorganization, merger, consolidation or other event that results in a change of the number and/or class of securities issuable upon exercise or conversion of this Warrant. The amendment to this Warrant shall provide for adjustments which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Article 2 including, without limitation, adjustments to the Warrant Price and to the number of securities or property issuable upon exercise of the new Warrant. The provisions of this Article 2.2 shall similarly apply to successive reclassifications, exchanges, substitutions, reorganizations, mergers, consolidations or other events.

2.3 Adjustments for Diluting Issuances. The Warrant Price and the number of Shares issuable upon exercise of this Warrant, and the number of shares of common stock or other securities issuable upon conversion of the Shares, shall be subject to adjustment, from time to time in the manner set forth in the Certificate as if the Shares were issued and outstanding on and as of the date of any such required adjustment. The provisions set forth for the Shares in the Certificate relating to the above in effect as of the Issue Date may not be amended, modified or waived, without the prior written consent of Holder unless such amendment, modification or waiver affects the rights associated with the Shares in the same manner as such amendment, modification or waiver affects the rights associated with all other shares of the same series and class as the Shares.

2.4 No Impairment. Without the prior written consent of Holder, the Company shall not, by amendment of the Certificate, the Stockholder's Agreement or its by-laws, or through any reorganization, recapitalization, share exchange, transfer of assets, consolidation, merger, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and shall at all times in good faith assist in carrying out of all such terms and in taking all such action as may be necessary or appropriate to protect Holder's rights against such avoidance or impairment.

2.5 Fractional Shares. No fractional Shares shall be issuable upon exercise or conversion of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional share interest arises upon any exercise or conversion of the Warrant, the Company shall eliminate such fractional share interest by paying Holder the amount computed by multiplying the fractional interest by the fair market value of a full Share.

2.6 Certificate as to Adjustments. Upon each adjustment of the Warrant Price or the kind or number of securities issuable under this Warrant pursuant to this Article 2, the Company shall promptly notify Holder in writing, and, at the Company's expense, promptly compute such adjustment, and furnish Holder with a certificate of its Chief Executive Officer, Corporate Secretary or a senior financial officer setting forth such adjustment and the facts upon which such adjustment is based. The Company shall, upon written request, furnish Holder a certificate setting forth the Warrant Price and the number and kind of securities issuable under

this Warrant in effect upon the date thereof and the series of adjustments leading to such Warrant Price and such number and kind of securities.

ARTICLE 3. REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants and covenants to Holder as follows:

(a) The Company has all requisite legal and corporate power and authority, and has taken all corporate action on the part of itself, its officers, directors and stockholders necessary, to execute, issue and deliver this Warrant, to issue the Shares issuable upon exercise or conversion of this Warrant and the securities issuable upon conversion of the Shares, and to carry out and perform its obligations under this Warrant, and this Warrant constitutes the legally binding and valid obligation of the Company enforceable in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, or similar laws relating to or affecting the enforcement of creditors' rights, or to principles of equity.

(b) This Warrant has been validly issued and is free of restrictions on transfer other than restrictions on transfer set forth herein and under applicable state and federal securities laws. All Shares which may be issued upon the exercise of the purchase or conversion right represented by this Warrant, and all securities, if any, issuable upon conversion of the Shares, shall, upon issuance, be duly authorized, validly issued, fully paid and nonassessable, and free of any liens and encumbrances (including preemptive or other similar rights) except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

(c) The execution, delivery, and performance of this Warrant will not result in a violation of, be in conflict with, or constitute a default under, with or without the passage of time or giving of notice, any provision of the Certificate, the Stockholder's Agreement (as defined in Section 3.3) or the Company's by-laws, any provision of any judgment, decree, or order to which the Company is a party, by which it is bound, or to which any of its material assets are subject, any contract, obligation, or commitment to which the Company is a party or by which it is bound, or any statute, rule, or governmental regulation applicable to the Company, or the creation of any lien, charge, or encumbrance upon any assets of the Company.

(d) The Company has provided Holder with a capitalization table of the Company, and such capitalization table is complete and accurate as of the date hereof and reflects all outstanding capital stock of the Company and all outstanding warrants, options, conversion privileges, preemptive rights and other rights or agreements to purchase or otherwise acquire or issued any equity securities or convertible debt securities of the Company. The Company has reserved a sufficient number of Shares for issuance upon the exercise of this Warrant and a sufficient number of shares of the securities issuable upon conversion of the Shares.

(e) The Warrant Price is no greater than the lowest price at which the Company has issued Series B Preferred Stock.

3.2 Notice of Certain Events; Information. If the Company proposes at any time (a) to declare any dividend or distribution upon any of its stock, whether in cash, property,

stock, or other securities and whether or not a regular cash dividend; (b) to effect any reclassification or recapitalization of any of its stock; (c) to merge or consolidate with or into any other corporation, or sell, lease, license, or convey all or substantially all of its assets, (d) to approve or participate in any Acquisition or an IPO, (e) to liquidate, dissolve or wind up, or (f) to take any action or to effect any transaction which requires the Company to provide notice to other holders of the Shares, then, in connection with each such event, the Company shall give Holder: (1) at least ten (10) days prior written notice of the date on which a record will be taken for such dividend or distribution (and specifying the date on which the holders of stock will be entitled thereto) or for determining rights to vote, if any, in respect of the matters referred to in (a) above; and (2) in the case of the matters referred to in (b), (c), (d), (e) or (f) above, at least ten (10) days prior written notice of the date when the same will take place (and, if applicable, specifying the date on which the holders of stock will be entitled to exchange their common stock for securities or other property deliverable upon the occurrence of such event). The Company will also use commercially reasonable efforts to provide such information in its possession as is requested by Holder and as is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements, including without limitation, a capitalization table, to be provided to Holder within thirty (30) days after the end of each fiscal quarter of the Company, and including the per share price of the Company's equity securities most recently issued prior to the date such capitalization table and indication are so provided; provided, that the Company's obligations set forth in this sentence shall terminate immediately prior to the Company's IPO.

3.3 Stockholder's Agreement; No Other Stockholder Rights. Except as provided in this Warrant and subject to the following provisions of this Section 3.3, Holder will not have any rights as a stockholder of the Company until the exercise of this Warrant. Effective upon any exercise or conversion of this Warrant, Holder and any permitted transferee of the Warrant or the Shares shall be entitled to all of the rights and benefits provided to all other holders of the Shares pursuant to, and the Company and Holder agree that Holder (and any permitted transferee of the Warrant or the Shares) will execute a counterpart signature page and become a party to (a) the Amended and Restated Investors' Rights Agreement dated as of October 31, 2013 by and among the Company and certain of its stockholders (as the same may be amended and/or restated from time to time the "Stockholder's Agreement"), provided that no such amendment shall in any respect restrict Holder's or such permitted transferee's right and ability to transfer this Warrant or the Shares to any affiliate of Holder or such permitted transferee and (b) provided Holder or any permitted transferee agrees to become a party to any such agreement entered into hereafter (such agreement not to be unreasonably withheld), any agreement to which holders of the Shares may hereafter become parties and the Shares may become bound (including, without limitation, any stockholders, investor rights, registration rights, right of refusal, voting and co-sale rights or similar agreement); and provided, that (v) Holder and any permitted transferee shall have all of the rights of each other holder of shares under the Stockholder's Agreement without regard to any applicable minimum share ownership or other requirement on which such rights are conditioned (excluding any observer rights under Section 3.3 of the Stockholder's Agreement), (w) with respect to Holder and its permitted transferees and assigns, notwithstanding any term or restriction on transfer contained in the Stockholder's Agreement, Holder and its permitted transferees shall have the unrestricted right to transfer all or any portion of the Shares to any assignee of or purchaser from Holder or its affiliate of their rights under the Credit Agreement (to the extent permitted by the Credit Agreement) or any interest or participation therein, (x) Holder and its permitted transferees may transfer its rights under the Stockholder's Agreement to any affiliate of Holder or any assignee of or purchaser from Holder or its affiliates of their rights under the Credit Agreement (to the extent permitted by the Credit Agreement) or any interest or participation therein, (y) Holder and its permitted

transferees shall have any purchase, participation, preemptive and registration rights granted to any other holders of the Shares under the Stockholder's Agreement, and (z) in the event any term, restriction or condition of the Stockholder's Agreement or any such agreement conflicts with, is inconsistent with or would otherwise prohibit or restrict the exercise of any right of Holder under this Warrant, the terms of this Warrant shall control and this Warrant and Holder shall not be subject to such term, restriction or condition. As an illustration and not by way of limitation as to the purpose and intent of this Section 3.3, the Company shall grant registration rights to Holder for any Shares acquired by Holder upon exercise or conversion of this Warrant or conversion of such Shares in parity to the registration rights granted to any other holder of the Shares party to the Stockholder's Agreement.

ARTICLE 4. REPRESENTATIONS AND WARRANTIES OF HOLDER. Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the securities to be acquired upon exercise of this Warrant by Holder will be acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act and Holder has no present intention of selling or engaging in any public distribution of the same except pursuant to a registration or exemption. Holder also represents that Holder has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise or conversion hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise or conversion hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state

securities laws, or unless exemption from such registration and qualification are otherwise available.

4.6 Market Stand-Off. Holder hereby agrees that, in connection with the Company's IPO it shall not to the extent requested by the Company's underwriter(s) sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company (other than any disposed of in the registration and those acquired by Holder in the IPO or thereafter in open market transactions, or any disposed of in a private

transaction to a transferee who agrees to be bound by the terms of this Section 4.6) for up to 180 days from the effective date of the registration statement filed in connection with the IPO; provided, however, that such 180 day period may be extended to the extent necessary to permit any managing underwriter to comply with NASD Rule 2711(f)(4); provided further, however, that Holder shall not be bound by the restrictions set forth in this Section 4.6 unless all five percent stockholders of the Company also agree to such restrictions; and provided, further, that any discretionary waiver or termination of the foregoing restrictions by the Company or the underwriters shall apply to all holders of the Company's equity securities subject to such restrictions pro rata based on the number of shares subject to such restrictions, Holder agrees to enter into the form of agreement as reasonably requested by the underwriter(s) in connection with this Section 4.6.

ARTICLE 5. MISCELLANEOUS.

5.1 Term. This Warrant is exercisable in whole or in part at any time and from time to time on or before the Expiration Date. The conditions under which the Warrant shall automatically convert on the Expiration Date are set forth in Section 5.8 below.

5.2 Legends.

(a) This Warrant and the Shares (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) shall be imprinted with a legend in substantially the following form:

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT PURSUANT TO THE PROVISIONS OF ARTICLE 5, MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED UNLESS REGISTERED UNDER SAID ACT AND APPLICABLE STATE SECURITIES LAW, OR UNLESS SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION CAN BE MADE IN COMPLIANCE WITH RULE 144 OF THE ACT, OR UNLESS, IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE REASONABLY SATISFACTORY TO THE ISSUER OF THESE SECURITIES, SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION IS EXEMPT FROM REGISTRATION.

THE SECURITIES EVIDENCED BY THIS CERTIFICATE ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE, INCLUDING A MARKET STAND-OFF PERIOD OF UP TO 180 DAYS IN THE EVENT OF A PUBLIC OFFERING, OR FOR A LONGER PERIOD NOT TO EXCEED 34 DAYS IF THE ISSUER'S TRANSFER AGENT IS NOTIFIED BY THE ISSUER OR THE ISSUER'S COUNSEL THAT THIS MARKET STAND-OFF RESTRICTION HAS

BEEN EXTENDED FOR THE PURPOSE OF COMPLYING WITH NASD RULE 2711(F)(4).

(b) Notwithstanding the foregoing, neither this Warrant nor any certificate or instrument evidencing this Warrant or the Shares shall bear, and the Company hereby agrees to remove, within ten (10) days of any written request (together with such evidence or documentation described in the following provisions) by Holder, pursuant to the following provisions of this Section 5.2(b), or not to affix, as applicable, any restrictive or other legend, notice or provision restricting the sale or transfer of this Warrant or the Shares, in each case provided that Holder has provided reasonable evidence to the Company (including any customary broker's or transferring stockholder's letters but expressly excluding an opinion of counsel other than with respect to clause (D) below) that: (A) a transfer of this Warrant or the Shares, as applicable, has been made pursuant to SEC Rule 144 (assuming the transferor is not an "affiliate" (as defined in SEC Rule 144) of the Company); (B) the Warrant or the Shares, as applicable, are then eligible for transfer pursuant to SEC Rule 144; (C) a transfer of this Warrant or the Shares has been made for no consideration to an affiliate of Holder or has otherwise been made to any affiliate of Holder who is an "accredited investor" as defined in Regulation D promulgated under the Act, and that is otherwise in compliance with all applicable securities laws; or (D) in connection with any other sale or transfer, provided that upon the request of the Company, such Holder provides the Company with an opinion of counsel to such Holder, in a reasonably acceptable form to the Company, to the effect that either such sale or transfer may be made without registration under the applicable requirements of the Act or that such a legend, notice or provision is not required by, and is not required in order to establish compliance with any provisions of, the Act. For all purposes of Section 1.4, the Company shall not be deemed to have delivered to Holder Shares unless and until the Company shall have fully complied with all of the terms and conditions of this Section 5.2(b) (if removal has been requested by Holder in compliance with this Section 5.2(b)).

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) may not be transferred or assigned in whole or in part without compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and, subject to Section 5.2(b), legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to an affiliate of Holder. Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144.

5.4 Transfer Procedure. Subject to the provisions of Article 5.3 and upon and effective immediately as of providing the Company with written notice substantially in the form attached as Appendix 2, Holder and any permitted transferee may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant (or the Shares issuable directly or indirectly, upon conversion of the Shares, if any) to any transferee, provided, however, in connection with any such transfer, Holder or such transferee will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and, in the case of transfer to transferee who is not an affiliate of the Holder, Holder or such transferee promptly thereafter surrenders this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable). The Company may refuse to transfer this Warrant or the Shares to any person who directly competes with the Company, unless, in either case, the stock of the Company is publicly traded.

5.5 Notices. All notices, requests, documents and other communications (collectively, "Notices") from the Company to Holder, or vice versa, shall be in writing and deemed validly delivered effective as of the earliest to occur of (a) when actually received, (b) when transmitted by facsimile or electronic mail (PDF), (c) the first business day after mailing by first-class registered or certified mail, postage prepaid, or after deposit with a reputable overnight courier with all charges paid, in each case other than actual receipt at such mailing, facsimile or electronic mail address as may have been furnished to the Company or Holder, as the case may be. As used in this Warrant, "business days" shall refer to all days other than any Saturday, Sunday or day on which the Company's primary depository bank is closed. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

MIDCAP FINANCIAL SBIC, LP

7255 Woodmont Avenue, Suite 200
Bethesda, Maryland 20814
Attention: Portfolio Management- Life Sciences
Fax: (301) 941-1450
E-Mail: lviera@midcapfinancial.com

with a copy to:

MC SERVICECO, LLC
7255 Woodmont Avenue, Suite 200
Bethesda, Maryland 20814
Attention: General Counsel
Fax: (301) 941-1450
E-Mail: legalnotices@midcapfinancial.com

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

CATABASIS PHARMACEUTICALS, INC.
One Kendall Square, Suite B14202
Cambridge, MA 02139
Attention: Ian Sanderson, CFO
Fax:
E-Mail:

With a copy to:

WilmerHale
60 State Street
Boston, MA 02109 USA
Attention: Jamie N. Class
Fax: (617) 526-5000
E-Mail: jamie.class@wilmerhale.com

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorneys' Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees.

5.8 Automatic Conversion upon Expiration. Unless Holder notifies the Company in writing to the contrary prior to such automatic conversion, in the event that, upon the earliest to occur of the Expiration Date or any expiration, involuntary termination or cancellation of this Warrant, the fair market value of one Share as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed as of immediately before such date to have been converted pursuant to Section 1.2 above as to all Shares for which it shall not previously have been exercised or converted, and the Company shall promptly deliver a certificate representing the Shares issued upon such conversion to the Holder.

5.9 Counterparts. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement.

5.10 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of Delaware without giving effect to its principles regarding conflicts of law.

5.11 Headings. The various headings in this Warrant are inserted for convenience only and shall not affect the meaning or interpretation of this Warrant or any provisions hereof.

5.12 Severability. In the event any one or more of the provisions of this Warrant shall for any reason be held invalid, illegal or unenforceable, the remaining provisions of this Warrant shall be unimpaired, and the invalid, illegal or unenforceable provision shall be replaced by a mutually acceptable valid, legal and enforceable provision.

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"COMPANY" Date: August 27, 2014

CATABASIS PHARMACEUTICALS, INC.

By: /s/ Ian Sanderson

Name: Ian Sanderson
Title: Chief Financial Officer and Treasurer

"HOLDER"

MIDCAP FINANCIAL SBIC, LP

By: MidCap Financial SBIC GP, LLC

By: /s/ Colleen S. Kovas

Name: Colleen S. Kovas
Title: Its Authorized Signatory

APPENDIX 1

NOTICE OF EXERCISE

1. Holder elects to purchase shares of the [Preferred/Common] Stock of CATABASIS PHARMACEUTICALS, INC. pursuant to the terms of the attached Warrant, and tenders payment of the purchase price of the shares in full.

[or]

1. Holder elects to convert the attached Warrant into Shares/cash [strike one] in the manner specified in the Warrant. This conversion is exercised for of the Shares covered by the Warrant.

[Strike paragraph that does not apply.]

2. Please issue a certificate or certificates representing the shares in the name specified below:

Holder's Name

(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Article 4 of the Warrant as the date hereof.

HOLDER:

By: (SEAL)

Name:

Title:

(Date):

APPENDIX 2

ASSIGNMENT

For value received, MidCap Financial SBIC, LLC hereby sells, assigns and transfers unto

Name:

Address:

Tax ID:

that certain Warrant to Purchase Stock issued by CATABASIS PHARMACEUTICALS, INC. (the "Company"), on August 27, 2014 (the "Warrant") together with all rights, title and interest therein.

HOLDER:

MIDCAP FINANCIAL SBIC, LP

By: MidCap Financial SBIC GP, LLC

By: (SEAL)

Name: _____

Title: _____

Date: _____

By its execution below, and for the benefit of the Company, _____ makes each of the representations and warranties set forth in Article 4 of the Warrant and agrees to all other provisions of the Warrant as of the date hereof.

[NAME OF TRANSFEREE]

By: _____ (SEAL)

Name: _____

Title: _____

Exhibit 10.4

CATABASIS PHARMACEUTICALS, INC.

AMENDED AND RESTATED 2008 EQUITY INCENTIVE PLAN

1. Purpose

The purpose of this Amended and Restated 2008 Equity Incentive Plan (the "Plan") of Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align their interests with those of the Company's stockholders. Except where the context otherwise requires, the term "Company" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the "Board").

2. Eligibility

All of the Company's employees, officers, directors, consultants and advisors are eligible to receive options, restricted stock, restricted stock units and other stock-based awards (each, an "Award") under the Plan. Each person who receives an Award under the Plan is deemed a "Participant".

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award. No director or person acting pursuant to the authority delegated by the Board shall be liable for any action or determination relating to or under the Plan made in good faith.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a "Committee"). All references in the Plan to the "Board" shall mean the Board or a Committee of the Board or the officers referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or officers.

(c) Delegation to Officers. To the extent permitted by applicable law, the Board may delegate to one or more officers of the Company the power to grant Awards (subject to any limitations under the Plan) to employees or officers of the Company or any of its present or future subsidiary corporations and to exercise such other powers under the Plan as the Board may determine, provided that the Board shall fix the terms of the Awards to be granted by such officers (including the exercise price of such Awards, which may include a formula by which the exercise price will be determined) and the maximum number of shares subject to Awards that the officers may grant; provided further, however, that no officer shall be authorized to grant Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) or to any "officer" of the Company (as defined by Rule 16a-1 under the Exchange Act).

4. Stock Available for Awards.

(a) Number of Shares. Subject to adjustment under Section 8, Awards may be made under the Plan for up to 5,770,000 shares of common stock, par value $0.001 per share, of the Company (the "Common Stock"). If any Award expires or is terminated, surrendered or canceled without having been fully exercised, is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right), or results in any Common Stock not being issued, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. Further, shares of Common Stock tendered to the Company by a Participant in connection with the exercise of an Award shall be added to the number of shares of Common Stock available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options (as hereinafter defined), the foregoing provisions shall be subject to any limitations under the Code. Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares. At no time while there is any Option (as defined below) outstanding and held by a Participant who was a resident of the State of California on the date of grant of such Option, shall the total number of shares of Common Stock issuable upon exercise of all outstanding options and the total number of shares provided for under any stock bonus or similar plan or agreement of the Company exceed the applicable percentage as calculated in accordance with the conditions and exclusions of Section 260.140.45 of the California Code of Regulations (the "California Regulations"), based on the shares of the Company which are outstanding at the time the calculation is made.

(b) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "Option") and determine the number of shares of Common Stock to be covered by each Option,

the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable. An Option that is not intended to be an Incentive Stock Option (as hereinafter defined) shall be designated a "Nonstatutory Stock Option".

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "Incentive Stock Option") shall only be granted to employees of Catabasis Pharmaceuticals, Inc., any of Catabasis Pharmaceuticals, Inc.'s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or for any action taken by the Board, including without limitation the conversion of an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify the exercise price in the applicable option agreement. The exercise price shall be not less than 100% of the Fair Market Value (as defined below) on the date the Option is granted.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement.

(e) Exercise of Option; Delivery of Shares. Options may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board together with payment in full as specified in Section 5(f) for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for in any of the following ways:

(1) in cash or by check, payable to the order of the Company;

(2) when the Common Stock is registered under the Exchange Act, except as may otherwise be provided in the applicable option agreement, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) when the Common Stock is registered under the Exchange Act and to the extent provided for in the applicable option agreement or approved by the Board, in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their fair market value as determined by (or in a manner approved by) the Board ("Fair Market Value"), provided (i) such method of payment is then

permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent permitted by applicable law and provided for in the applicable option agreement or approved by the Board, in its sole discretion, by (i) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (ii) payment of such other lawful consideration as the Board may determine; or

(5) by any combination of the above permitted forms of payment.

6. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("Restricted Stock"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. Instead of granting Awards for Restricted Stock, the Board may grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests ("Restricted Stock Units") (Restricted Stock and Restricted Stock Units are each referred to herein as a "Restricted Stock Award").

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Participants holding shares of Restricted Stock will be entitled to all ordinary cash dividends paid with respect to such shares, unless otherwise provided by the Board. Unless otherwise provided, by the Board, if any dividends or distributions are paid in shares, or consist of a dividend or distribution to holders of Common Stock other than an ordinary cash dividend, the shares, cash or other property will be subject to the same restrictions on transferability and forfeitability as the shares of Restricted Stock with respect to which they were paid.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death (the "Designated Beneficiary"). In the absence of an effective designation by a Participant, "Designated Beneficiary" shall mean the Participant's estate.

7. Other Stock-Based Awards

Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("Other Stock-Based Awards"), including without limitation stock appreciation rights ("SARs") and Awards entitling recipients to receive shares of Common Stock to be delivered in the future. Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price applicable thereto.

8. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the number and class of securities and exercise price per share of each outstanding Option, (iii) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award, and (iv) the terms of each other outstanding Award shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events.

(1) Definition. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any exchange of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock Awards. In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock Awards on such terms as the Board determines: (i) provide that Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or

succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that the Participant's unexercised Awards (whether or not exercisable) will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), make or provide for a cash payment to a Participant equal to the excess, if any, of (A) the Acquisition Price times the number of shares of Common Stock subject to the Participant's Awards (to the extent the exercise price does not exceed the Acquisition Price) over (B) the aggregate exercise price of all such outstanding Awards and any applicable tax withholdings, in exchange for the termination of such Awards, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 8(b), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of common stock of the acquiring or succeeding corporation (or an affiliate thereof) equivalent in value (as determined by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock Awards. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company under each outstanding Restricted Stock Award shall inure to the benefit of the Company's successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to the Common Stock subject to such Restricted Stock Award. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically approved by the Board of Directors and provided to the contrary in the instrument evidencing any Restricted Stock Award or any other

agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock Awards then outstanding shall automatically be deemed terminated or satisfied.

9. General Provisions Applicable to Awards

(a) Transferability of Awards. Except as the Board may otherwise determine or provide in an Award, Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may decide to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise or release from forfeiture of an Award or, if the Company so requires, at the same time as is payment of the exercise price unless the Company determines otherwise. If provided for in an Award or approved by the Board in its sole discretion, a Participant may satisfy such tax obligations in whole or in part by delivery of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; provided, however, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income). Shares surrendered to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award.

(1) The Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, would not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 8 hereof.

(2) The Board may, without stockholder approval, amend any outstanding Award granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Award. The Board may also, without stockholder approval, cancel any outstanding award (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled award.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be.

(i) Drag Along. Any holder of an Award who is the registered or beneficial owner of one percent or greater of the total number of shares of Common Stock (treating for this purpose all shares of Common Stock issuable upon exercise of or conversion of outstanding options, warrants or convertible securities, as if exercised or converted) (a "1% Holder"), shall, for so long as such holder remains a 1% Holder, be subject to either (i) the "Drag Along" provision contained in Section 3 of the Voting Agreement dated on or about April , 2010, by and among the Company and the holders of capital stock of the Company party thereto, as amended and/or restated from time to time, or (ii) in the event that such Voting Agreement ceases to be applicable, to the following provision: In the event the holders of a majority of the preferred stock of the Company then outstanding (the "Majority Shareholders") determine to sell all or substantially all of the assets or more than fifty percent (50%) of the outstanding voting power of the Company to any non-affiliate(s) of the Company or any of the Majority Shareholders, or to cause the Company to merge with or into or consolidate with any non-affiliate(s) of the Company or any of the Majority Shareholders (in each case such non-affiliate, the "Buyer"), in each case in a transaction constituting a change in control of the Company, in a bona fide

negotiated transaction (a "Sale"), the holder of the Award, shall be obligated to and shall upon the written request of the Majority Shareholders: (a) if such transaction requires stockholder approval, with respect to all shares of capital stock of the Company that such holder owns or over which such holder otherwise exercises voting power, to vote (in person, by proxy or by action by written consent, as applicable) all such shares in favor of, and adopt, such Sale and to vote in opposition to any and all other proposals that could delay or impair the ability of the Company to consummate such Sale, (b) if such transaction is a stock sale, sell, transfer and deliver, or cause to be sold, transferred and delivered, to the Buyer, any shares of Common Stock issued as a result of the exercise or vesting of an Award ("Award Shares") and still owned by such holder on substantially the same terms applicable to the Majority Shareholders (with appropriate adjustments to reflect the conversion of convertible securities, the redemption of redeemable securities and the exercise of vested securities as well as the relative preferences and priorities of preferred stock) and (c) execute and deliver such instruments of conveyance and transfer and take such other action in favor of any Sale proposed by the Majority Shareholders and executing any purchase agreements, merger agreements, indemnity agreements, escrow agreements or related documents, as the Majority Shareholders or the Buyer may reasonably request in order to carry out the terms and provisions hereof.

The provisions of this Section 9(i) shall terminate upon the completion of the Company's initial public offering of shares of Common Stock.

10. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date on which it is adopted by the Board. No Awards shall be granted under the Plan after the expiration of 10 years from the earlier of (i) the date on which the Plan was adopted by the Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time; provided that if at any time the approval of the Company's stockholders is required as to any modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the

amendment, any amendment to the Plan adopted in accordance with this Section 10(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment does not materially and adversely affect the rights of Participants under the Plan.

(e) Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable blue sky, securities or tax laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to this Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Code Section 409A. No Award shall provide for deferral of compensation that does not comply with Section 409A of the Code, unless the Board, at the time of grant, specifically provides that the Award is not intended to comply with Section 409A of the Code. The Company shall have no liability to a Participant, or any other party, if an Award that is intended to be exempt from, or compliant with, Section 409A is not so exempt or compliant or for any action taken by the Board.

(g) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than such state.

First Amendment to Amended and Restated 2008 Equity Incentive Plan

The Amended and Restated 2008 Equity Incentive Plan (the "Plan") of Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company"), be, and hereby is, amended as follows:

1. By deleting the first sentence of Section 4(a) of the Plan and replacing it in its entirety with the following:

"Subject to adjustment under Section 8, Awards may be made under the Plan for up to 8,767,000 shares of common stock, par value $0.001 per share, of the Company (the "Common Stock")."

Adopted by the Board of Directors on March 1, 2011

Approved by the stockholders of the Company as of March 15, 2011

Second Amendment to Amended and Restated 2008 Equity Incentive Plan

WHEREAS, the Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company"), Amended and Restated 2008 Equity Incentive Plan (the "Plan"), was adopted by the Board of Directors of the Company (the "Board") on April 6, 2010 and by the stockholders of the Company on April 6, 2010; and

WHEREAS, the Plan was amended by a First Amendment to Plan that was adopted by the Board on March 1, 2011 and by the stockholders of the Company on March 15, 2011 (the "First Amendment"), which increased the number of shares of common stock, par value $0.001 per share, of the Company ("Common Stock") available for Awards (as such term is defined in the Plan) made under the Plan from 5,770,000 to 8,767,000; and

WHEREAS, the Board and the stockholders of the Company desire to amend further the Plan to increase further the number of shares of Common Stock available for Awards made under the Plan.

NOW THEREFORE, the Plan, as amended by the First Amendment, is hereby further amended as follows:

1. By deleting the first sentence of Section 4(a) of the Plan, as amended by the First Amendment, and replacing it in its entirety with the following:

"Subject to adjustment under Section 8, Awards may be made under the Plan for up to 12,990,518 shares of common stock, par value $0.001 per share, of the Company (the "Common Stock")."

Adopted by the Board of Directors on July 9, 2012

Approved by the stockholders of the Company as of July 9, 2012

Third Amendment to Amended and Restated 2008 Equity Incentive Plan

WHEREAS, the Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company"), Amended and Restated 2008 Equity Incentive Plan (the "Plan"), was adopted by the Board of Directors of the Company (the "Board") on April 6, 2010 and by the stockholders of the Company on April 6, 2010; and

WHEREAS, the Plan was amended by a First Amendment to the Plan that was adopted by the Board on March 1, 2011 and by the stockholders of the Company on March 15, 2011 (the "First Amendment"), which increased the number of shares of common stock, par value $0.001 per share, of the Company ("Common Stock") available for Awards (as such term is defined in the Plan) made under the Plan from 5,770,000 to 8,767,000;

WHEREAS, the Plan was amended by a Second Amendment to the Plan that was adopted by the Board on July 9, 2012 and by the stockholders of the Company on July 9, 2012 (the "Second Amendment"), which increased the number of shares of common stock, par value $0.001 per share, of the Company ("Common Stock") available for Awards (as such term is defined in the Plan) made under the Plan from 8,767,000 to 12,990,518; and

WHEREAS, the Board and the stockholders of the Company desire to amend further the Plan to increase further the number of shares of Common Stock available for Awards made under the Plan.

NOW THEREFORE, the Plan, as amended by the Amendments, is hereby further amended as follows:

1. By deleting the first sentence of Section 4(a) of the Plan, as amended by the First Amendment and the Second Amendment, and replacing it in its entirety with the following:

"Subject to adjustment under Section 8, Awards may be made under the Plan for up to 15,217,400 shares of common stock, par value $0.001 per share, of the Company (the "Common Stock")."

Adopted by the Board of Directors on December 18, 2012

Approved by the stockholders of the Company as of January 11, 2013

Fourth Amendment to Amended and Restated 2008 Equity Incentive Plan

WHEREAS, the Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company"), Amended and Restated 2008 Equity Incentive Plan (the "Plan"), was adopted by the Board of Directors of the Company (the "Board") on April 6, 2010 and by the stockholders of the Company on April 6, 2010; and

WHEREAS, the Plan was amended by a First Amendment to the Plan that was adopted by the Board on March 1, 2011 and by the stockholders of the Company on March 15, 2011 (the "First Amendment"), which increased the number of shares of common stock, par value $0.001 per share, of the Company ("Common Stock") available for Awards (as such term is defined in the Plan) made under the Plan from 5,770,000 to 8,767,000;

WHEREAS, the Plan was amended by a Second Amendment to the Plan that was adopted by the Board on July 9, 2012 and by the stockholders of the Company on July 9, 2012 (the "Second Amendment"), which increased the number of shares of common stock, par value $0.001 per share, of the Company ("Common Stock") available for Awards (as such term is defined in the Plan) made under the Plan from 8,767,000 to 12,990,518;

WHEREAS, the Plan was amended by a Third Amendment to the Plan that was adopted by the Board on December 18, 2012 and by the stockholders of the Company on January 11, 2013 (the "Second Amendment"), which increased the number of shares of common stock, par value $0.001 per share, of the Company ("Common Stock") available for Awards (as such term is defined in the Plan) made under the Plan from 12,990,518 to 15,217,400; and

WHEREAS, the Board and the stockholders of the Company desire to amend further the Plan to increase further the number of shares of Common Stock available for Awards made under the Plan.

NOW THEREFORE, the Plan, as amended by the Amendments, is hereby further amended as follows:

1. By deleting the first sentence of Section 4(a) of the Plan, as amended by the First Amendment, the Second Amendment and the Third Amendment, and replacing it in its entirety with the following:

"Subject to adjustment under Section 8, Awards may be made under the Plan for up to 21,838,299 shares of common stock, par value $0.001 per share, of the Company (the "Common Stock")."

Adopted by the Board of Directors on October 31, 2013

Approved by the stockholders of the Company as of October 31, 2013

Exhibit 10.5

CATABASIS PHARMACEUTICALS, INC.

Incentive Stock Option Agreement
Granted Under 2008 Equity Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Catabasis Pharmaceuticals, Inc. a Delaware corporation (the "Company"), on [ ] (the "Grant Date") to [ ], an employee of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's Amended and Restated 2008 Equity Incentive Plan, as amended to date (the "Plan"), a total of [ ] shares (the "Shares") of common stock, $0.001 par value per share, of the Company ("Common Stock") at an exercise price of $[ ] per Share, with a vesting commencement date of [ ] (the "Vesting Commencement Date"). Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on [ ] (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") as to [ ].

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be in writing, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time the Participant exercises this option, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any parent or subsidiary of the Company as defined in Section 424(e) or (f) of the Code (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while the Participant is an Eligible Participant and the Company has not terminated such relationship for "Cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of the Participant's death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of the Participant's employment by the Company for Cause, and the effective date of such employment termination is subsequent to the date of the delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate upon the effective date of such termination of employment). If the Participant is party to an employment or severance agreement with the Company that contains a definition of "cause" for termination of employment, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform the Participant's responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for Cause if the Company determines, within 30 days after the Participant's resignation, that discharge for Cause was warranted.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after the Participant's receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) Prohibited Transfers. Notwithstanding anything else in this agreement to the contrary, the Participant shall not transfer any Shares, or any interest therein, to any person or entity that is a competitor of the Company, as determined by the Board of Directors of the Company in its sole discretion, unless such transfer is made in connection with the sale of all or substantially all of the capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise. Upon receipt of a Transfer Notice, the Company shall immediately notify the Participant as to whether the proposed transferee is a competitor and as a result thereof the proposed transfer is invalid.

(i) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock or any other securities of the Company pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address Rule 2711(f) of the National Association of Securities Dealers, Inc. or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such

offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Tax Matters.

(a) Withholding. No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

(b) Disqualifying Disposition. If the Participant disposes of Shares acquired upon exercise of this option within two years from the Grant Date or one year after such Shares were acquired pursuant to exercise of this option, the Participant shall notify the Company in writing of such disposition.

7. Nontransferability of Option.

This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

8. Delivery of Shares; Compliance with Securities Laws, Etc.

(a) General. The Company shall, upon payment by the Participant of the exercise price for the number of Shares purchased and paid for, make prompt delivery of such Shares to the Participant, provided that if any law or regulation requires the Company to take any action with respect to such Shares before the issuance thereof, then the date of delivery of such Shares shall be extended for the period necessary to complete such action.

(b) Listing, Qualification, Etc. This option shall be subject to the requirement that if, at any time, counsel to the Company shall determine that the listing, registration or qualification of the Shares subject hereto upon any securities exchange or under any state or federal law, or the consent or approval of any governmental or regulatory body, or that the disclosure of non-public information or the satisfaction of any other condition is necessary as a condition of, or in connection with, the issuance or purchase of shares hereunder, this option may not be exercised, in whole or in part, unless such listing, registration, qualification, consent or approval, disclosure or satisfaction of such other condition shall have been effected or obtained on terms acceptable to the Board of Directors. Nothing herein shall be deemed to require the Company to apply for, effect or obtain such listing, registration, qualification, or disclosure, or to satisfy such other condition.

(c) Legends on Stock Certificates. All stock certificates representing Shares issued to the Participant upon exercise of this option shall have affixed thereto legends substantially in the following forms and any other legends required by applicable state or federal law:

> "The shares of stock represented by this certificate have not been registered under the Securities Act of 1933, as amended, and may not be transferred, sold or otherwise disposed of in the absence of an effective registration statement under such Act or an opinion of counsel satisfactory to the Company to the effect that registration under such Act is not required."
>
> "The shares of stock represented by this certificate are subject to certain restrictions on transfer contained in an Option Agreement with the Company, a copy of which will be furnished upon request by the Company."

9. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

CATABASIS PHARMACEUTICALS, INC

Date:

By: _____

Name:
Title:

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's Amended and Restated 2008 Equity Incentive Plan, as amended to date.

PARTICIPANT

Date: _____

By: _____
[ ]

Address: _____

_____

NOTICE OF STOCK OPTION EXERCISE

Date: _____

Catabasis Pharmaceuticals, Inc.
One Kendall Square, Suite B14202
Cambridge, MA 02139

Attention: Treasurer

Dear Sir or Madam:

I am the holder of an Incentive Stock Option granted to me under the Catabasis Pharmaceuticals Inc. (the "Company") Amended and Restated 2008 Equity Incentive Plan, as amended to date, on [ ] for the purchase of [ ] shares of Common Stock of the Company at an exercise price of $[ ] per share.

I hereby exercise my option to purchase shares of Common Stock (the "Shares"), for which I have enclosed [insert method of payment] in the amount of . Please register my stock certificate as follows:

Name(s): _____

_____

Address: _____

Tax I.D. #: _____

I represent, warrant and covenant as follows:

I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "Securities Act"), or any rule or regulation under the Securities Act.

I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

I understand that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least six months and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____
(Signature)

Exhibit 10.6

CATABASIS PHARMACEUTICALS, INC.

Nonstatutory Stock Option Agreement
Granted Under 2008 Equity Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Catabasis Pharmaceuticals, Inc. a Delaware corporation (the "Company"), on [ ] (the "Grant Date") to [ ], a [consultant/advisor] to the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's Amended and Restated 2008 Equity Incentive Plan, as amended to date (the "Plan"), a total of [ ] shares (the "Shares") of common stock, $0.001 par value per share, of the Company ("Common Stock") at an exercise price of $[ ] per Share, with a vesting commencement date of [ ] (the "Vesting Commencement Date"). Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on [ ] (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall not be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

This option will become exercisable ("vest") as to [ ].

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be in writing, signed by the Participant, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee,

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officer or director of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive option grants under the Plan (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "Cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment or other relationship with the Company is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment or other relationship. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment or other relationship by the Company for Cause, and the effective date of such employment or other termination is subsequent to the date of the delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment or other relationship shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment or other relationship (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate immediately upon the effective date of such termination of employment or other relationship). If the Participant is party to an employment, consulting or severance agreement with the Company that contains a definition of "cause" for termination of employment or other relationship, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for "Cause" if the Company determines, within 30 days after the Participant's resignation, that discharge for Cause was warranted.

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4. Company Right of First Refusal and Restrictions on Transfer.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, more than 75% (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction).

(h) Prohibited Transfers. Notwithstanding anything else in this agreement to the contrary, the Participant shall not transfer any Shares, or any interest therein, to any person or entity that is a competitor of the Company, as determined by the Board of Directors of the Company in its sole discretion, unless such transfer is made in connection with the sale of all or substantially all of the capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise. Upon receipt of a Transfer Notice, the Company shall immediately notify the Participant as to whether the proposed transferee is a competitor and as a result thereof the proposed transfer is invalid.

(i) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(j) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

> "The shares represented by this certificate are subject to a right of first refusal in favor of the Company, contained in an Option Agreement with the Company, a copy of which will be furnished upon request by the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock [or any other securities of the Company] pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address Rule 2711(f) of the National Association of Securities Dealers, Inc. or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Withholding.

No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option.

7. Nontransferability of Option.

This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

8. Delivery of Shares; Compliance with Securities Laws, Etc.

(a) General. The Company shall, upon payment by the Participant of the exercise price for the number of Shares purchased and paid for, make prompt delivery of such Shares to the Participant, provided that if any law or regulation requires the Company to take any action with respect to such Shares before the issuance thereof, then the date of delivery of such Shares shall be extended for the period necessary to complete such action.

(b) Listing, Qualification, Etc. This option shall be subject to the requirement that if, at any time, counsel to the Company shall determine that the listing, registration or qualification of the Shares subject hereto upon any securities exchange or under any state or federal law, or the consent or approval of any governmental or regulatory body, or that the disclosure of non-public information or the satisfaction of any other condition is necessary as a condition of, or in connection with, the issuance or purchase of shares hereunder, this option may not be exercised, in whole or in part, unless such listing, registration, qualification, consent or approval, disclosure or satisfaction of such other condition shall have been effected or obtained on terms acceptable to the Board of Directors. Nothing herein shall be deemed to require the Company to apply for, effect or obtain such listing, registration, qualification, or disclosure, or to satisfy such other condition.

(c) Legends on Stock Certificates. All stock certificates representing Shares issued to the Participant upon exercise of this option shall have affixed thereto legends substantially in the following forms, in addition to the legend set forth in Section 4(i) and any other legends required by applicable state law:

> "The shares of stock represented by this certificate have not been registered under the Securities Act of 1933, as amended, and may not be transferred, sold or otherwise disposed of in the absence of an effective registration statement under such Act or an opinion of counsel satisfactory to the Company to the effect that registration under such Act is not required."
>
> "The shares of stock represented by this certificate are subject to certain restrictions on transfer contained in an Option Agreement with the Company, a copy of which will be furnished upon request by the Company."

9. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

CATABASIS PHARMACEUTICALS, INC

Date:

By: _____

Name:
Title:

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's Amended and Restated 2008 Equity Incentive Plan, as amended to date.

PARTICIPANT

Date: _____ By: _____
[ ]
Address: _____
_____

NOTICE OF STOCK OPTION EXERCISE

Date: _____

Catabasis Pharmaceuticals, Inc.
One Kendall Square, Suite B14202
Cambridge, MA 02139

Attention: Treasurer

Dear Sir or Madam:

I am the holder of an Nonstatutory Stock Option Agreement granted to me under the Catabasis Pharmaceutical Inc. (the "Company") 2008 Amended and Restated Equity Incentive Plan, as amended to date, on [ ] for the purchase of [ ] shares of Common Stock of the Company at an exercise price of $[ ] per share.

I hereby exercise my option to purchase shares of Common Stock (the "Shares"), for which I have enclosed [insert method of payment] in the amount of . Please register my stock certificate as follows:

Name(s): _____

_____

Address: _____

Tax I.D. #: _____

I represent, warrant and covenant as follows:

1. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "Securities Act"), or any rule or regulation under the Securities Act.

2. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

3. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

4. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

5. I understand that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least six months and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____
(Signature)

INDEMNIFICATION AGREEMENT

THIS INDEMNIFICATION AGREEMENT (the "Agreement") is made and entered into as of [ ] between Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company," which term shall include where appropriate, any Entity (as hereinafter defined) controlled by or under the control of Catabasis Pharmaceuticals, Inc.), and [ ] ("Indemnitee").

WHEREAS, it is essential to the Company that it be able to retain and attract as directors the most capable persons available;

WHEREAS, increased corporate litigation has subjected directors to litigation risks and expenses, and the limitations on the availability of directors' and officers' liability insurance has made it increasingly difficult for the Company to attract and retain such persons;

WHEREAS, the Company desires to provide Indemnitee with specific contractual assurance of Indemnitee's rights to indemnification against litigation risks and expenses (regardless, among other things, of any amendment to or revocation of the Company's Certificate of Incorporation or By-Laws, each as amended from time to time (the "Charter Documents"), any change in the ownership of the Company or the composition of its Board of Directors) which indemnification is intended to be greater than that which is afforded by the Charter Documents;

WHEREAS, in accordance with the authorization as provided by applicable law and the provisions of the [Amended and Restated] Investors' Rights Agreement dated as of [ ] by and among the Company and the Investors named therein, the Company [will obtain and] shall [thereafter] maintain a policy or policies of directors' and officers' liability insurance ("D & O Insurance"), covering certain liabilities which may be incurred by its directors in the performance of their obligations to the Company; and

WHEREAS, in order to induce Indemnitee to serve as a director of the Company, the Company has determined and agreed to enter into this Agreement with Indemnitee.

[WHEREAS, Indemnitee has certain rights to indemnification and/or insurance provided by [ ] (or [an] affiliate[s] thereof) which Indemnitee and [ ] (or such affiliate[s] thereof) intend to be secondary to the primary obligation of the Company to indemnify Indemnitee as provided herein, with the Company's acknowledgement and agreement to the foregoing being a material condition to Indemnitee's willingness to serve on the Board.]

NOW, THEREFORE, in consideration of Indemnitee's service as a director, the parties hereto agree as follows:

1. Definitions. For purposes of this Agreement:

(a) "Corporate Status" describes the status of a person who is serving or has served (i) as a director of the Company, including as a member of any committee thereof, (ii) in any capacity with respect to any employee benefit plan of the Company, or (iii) as a director,

partner, trustee, officer, employee, or agent of any other Entity (as defined below) at the request of the Company. For purposes of subsection (iii) of this Section 1(a), a director of the Company who is serving or has served as a director, partner, trustee, officer, employee or agent of a Subsidiary (as defined below) shall be deemed to be serving at the request of the Company.

(b) "Disinterested Director" means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(c) "Entity" shall mean any corporation, partnership, limited liability company, joint venture, trust, foundation, association, organization or other legal entity.

(d) "Expenses" shall mean all reasonable fees, costs and expenses actually incurred in connection with any Proceeding (as defined below), including, without limitation, reasonable attorneys' fees, disbursements and retainers, reasonable fees and disbursements of expert witnesses, private investigators and professional advisors (including, without limitation, accountants and investment bankers), court costs, transcript costs, fees of experts, travel expenses, duplicating, printing and binding costs, telephone and fax transmission charges, postage, delivery services, secretarial services and other reasonable disbursements and expenses.

(e) "Independent Counsel" means a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning the Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term "Independent Counsel" shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee's rights under this Agreement. The Company agrees to pay the reasonable fees of the Independent Counsel referred to above and to fully indemnify such counsel against any and all Expenses and Liabilities (as defined below) arising out of or relating to this Agreement or its engagement pursuant hereto.

(f) "Liabilities" shall mean judgments, damages, liabilities, losses, penalties, excise taxes, fines and amounts paid in settlement.

(g) "Proceeding" shall mean any threatened, pending or completed claim, action, suit, arbitration, alternate dispute resolution process, investigation, administrative hearing, appeal, or any other proceeding, whether civil, criminal, administrative, arbitrative or investigative, whether formal or informal, including a proceeding initiated by Indemnitee pursuant to Section 10 of this Agreement to enforce Indemnitee's rights hereunder, and shall include a Proceeding pending on or before the date of this Agreement.

(h) "Subsidiary" shall mean any corporation, partnership, limited liability company, joint venture, trust or other Entity of which the Company owns (either directly or through or together with another Subsidiary of the Company) either (i) a general partner, managing member or other similar interest or (ii) (A) more than 50% of the voting power of the

voting capital equity interests of such corporation, partnership, limited liability company, joint venture or other Entity, or (B) more than 50% of the outstanding voting capital stock or other voting equity interests of such corporation, partnership, limited liability company, joint venture or other Entity.

2. Agreement to Indemnify.

(a) Proceedings Other Than Proceedings by or in the Right of the Company. Indemnitee shall be entitled to the rights of indemnification provided in this Section 2(a) if, by reason of Indemnitee's Corporate Status, Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding other than a Proceeding by or in the right of the Company or a Proceeding instituted by Indemnitee pursuant to Section 9 of this Agreement to enforce Indemnitee's rights under this Agreement. Pursuant to this Section 2(a), Indemnitee shall be indemnified by the Company against all Expenses and Liabilities actually incurred or paid by Indemnitee in connection with such Proceeding, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company and, with respect to any criminal Proceeding, had no reasonable cause to believe Indemnitee's conduct was unlawful.

(b) Proceedings by or in the Right of the Company. Indemnitee shall be entitled to the rights of indemnification provided in this Section 2(b) if, by reason of Indemnitee's Corporate Status, Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding brought by or in the right of the Company. Pursuant to this Section 2(b), Indemnitee shall be indemnified by the Company against all Expenses incurred or paid by Indemnitee in connection with such Proceeding if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company; provided, however, that, if applicable law so provides, no indemnification against such Expenses shall be made in respect of any claim, issue or matter in such Proceeding as to which Indemnitee shall have been adjudged to be liable to the Company unless and to the extent that the Court of Chancery of the State of Delaware or other court of competent jurisdiction shall determine that such indemnification may be made.

3. Indemnification for Expenses of a Party Who is Wholly or Partly Successful. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of Indemnitee's Corporate Status, a party to and is successful, on the merits or otherwise, in any Proceeding, Indemnitee shall be indemnified to the maximum extent permitted by applicable law against all Expenses and Liabilities actually incurred or paid by Indemnitee in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses and Liabilities actually incurred or paid by Indemnitee in connection with each successfully resolved claim, issue or matter. For purposes of this Section and without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, shall be deemed to be a successful result as to such claim, issue or matter.

4. Additional Indemnity. In addition to, and without regard to any limitations on, the indemnification provided for in Section 2, the Company shall and hereby does indemnify and hold harmless Indemnitee against all Expenses and Liabilities actually incurred or paid by Indemnitee or on Indemnitee's behalf if, by reason of Indemnitee's Corporate Status, Indemnitee is, or is threatened to be made, a party to or participant in any Proceeding (including a Proceeding by or in the right of the Company), including, without limitation, all liability arising out of the negligence or active or passive wrongdoing of Indemnitee. The only limitation that shall exist upon the Company's obligations pursuant to this Agreement shall be that the Company shall not be obligated to make any payment to Indemnitee that is finally determined (under the procedures, and subject to the presumptions, set forth in Section 8 hereof) to be unlawful under applicable law.

5. Contribution in the Event of Joint Liability.

(a) Whether or not the indemnification provided in Sections 2 or 4 hereof is available, in respect of any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall pay, in the first instance, the entire amount of any judgment or settlement of such action, suit or proceeding without requiring Indemnitee to contribute to such payment and the Company hereby waives and relinquishes any right of contribution it may have against Indemnitee. The Company shall not enter into any settlement of any action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding) unless such settlement provides for a full and final release of all claims asserted against Indemnitee.

(b) Without diminishing or impairing the obligations of the Company set forth in the preceding subparagraph, if, for any reason, Indemnitee shall elect or be required to pay all or any portion of any judgment or settlement in any threatened, pending or completed action, suit or proceeding in which the Company is jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), the Company shall contribute to the amount of Expenses and Liabilities actually incurred and paid or payable by Indemnitee in proportion to the relative benefits received by the Company and all officers, directors or employees of the Company other than Indemnitee who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, from the transaction from which such action, suit or proceeding arose; provided, however, that the proportion determined on the basis of relative benefit may, to the extent necessary to conform to law, be further adjusted by reference to the relative fault of the Company and all officers, directors or employees of the Company other than Indemnitee who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, in connection with the events that resulted in such Expenses or Liabilities, as well as any other equitable considerations which the law may require to be considered. The relative fault of the Company and all officers, directors or employees of the Company other than Indemnitee who are jointly liable with Indemnitee (or would be if joined in such action, suit or proceeding), on the one hand, and Indemnitee, on the other hand, shall be determined by reference to, among other things, the degree to which their actions were motivated by intent to gain personal profit or

advantage, the degree to which their liability is primary or secondary, and the degree to which their conduct is active or passive.

(c) The Company hereby agrees to fully indemnify and hold Indemnitee harmless from any claims of contribution which may be brought by officers, directors or employees of the Company other than Indemnitee who may be jointly liable with Indemnitee.

6. Indemnification for Expenses of a Witness or in Response to a Subpoena. Notwithstanding any other provision of this Agreement, to the extent that Indemnitee is, by reason of Indemnitee's Corporate Status, a witness in any Proceeding to which Indemnitee is not a party, or receives a subpoena in any

Proceeding to which Indemnitee is not a party, Indemnitee shall be indemnified against all Expenses paid or incurred by Indemnitee in connection therewith and in the manner set forth in this Agreement.

7. Advancement of Expenses. Notwithstanding any other provision of this Agreement, the Company shall advance all Expenses incurred by or on behalf of Indemnitee in connection with any Proceeding by reason of Indemnitee's Corporate Status within thirty (30) days after the receipt by the Company of a statement or statements from Indemnitee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by Indemnitee and shall include or be preceded or accompanied by a written undertaking by or on behalf of Indemnitee to repay any Expenses advanced if it shall ultimately be determined by a final, non-appealable order of the Court of Chancery of the State of Delaware or other court of competent jurisdiction that Indemnitee is not entitled to be indemnified against such Expenses. Any advances and undertakings to repay pursuant to this Section 7 shall be unsecured and interest free and made without regard to Indemnitee's financial ability to repay such Expenses.

8. Procedures and Presumptions for Determination of Entitlement to Indemnification. It is the intent of this Agreement to secure for Indemnitee rights of indemnity that are at least as favorable as may be permitted under applicable law and public policy of the State of Delaware. Accordingly, the parties agree that the following procedures and presumptions shall apply in the event of any question as to whether Indemnitee is entitled to indemnification under this Agreement:

(a) To obtain indemnification (including, but not limited to, the advancement of Expenses and contribution by the Company) under this Agreement, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification.

(b) Upon written request by Indemnitee for indemnification pursuant to the first sentence of Section 8(a) hereof, a determination, if required by applicable law, with respect to Indemnitee's entitlement thereto shall be made in the specific case by one of the following three methods, which shall be at the election of the Board of Directors : (1) by a majority vote of the disinterested directors, even though less than a quorum, (2) by a committee of disinterested directors designated by a majority vote of the disinterested directors, even though less than a

quorum, (3) if there are no disinterested directors or if the disinterested directors so direct, by independent legal counsel in a written opinion to the Board of Directors, a copy of which shall be delivered to the Indemnitee, or (4) if so directed by the Board of Directors, by the stockholders of the Company.

(c) If the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 8(b) hereof, the Independent Counsel shall be selected as provided in this Section 8(c). The Independent Counsel shall be selected by the Board of Directors. Indemnitee may, within 10 days after such written notice of selection shall have been given, deliver to the Company a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 1 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If a written objection is made and substantiated, the Independent Counsel selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court has determined that such objection is without merit. If, within 20 days after submission by Indemnitee of a written request for indemnification pursuant to Section 8(a) hereof, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition the Court of Chancery of the State of Delaware or other court of competent jurisdiction for resolution of any objection which shall have been made by the Indemnitee to the Company's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by the court or by such other person as the court shall designate, and the person with respect to whom all objections are so resolved or the person so appointed shall act as Independent Counsel under Section 8(b) hereof. The Company shall pay any and all reasonable fees and expenses of Independent Counsel incurred by such Independent Counsel in connection with acting pursuant to Section 8(b) hereof, and the Company shall pay all reasonable fees and expenses incident to the procedures of this Section 8(c), regardless of the manner in which such Independent Counsel was selected or appointed.

(d) In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that Indemnitee is entitled to indemnification under this Agreement if Indemnitee has submitted a request for indemnification in accordance with Section 8(a) of this Agreement. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion, by clear and convincing evidence.

(e) Indemnitee shall be deemed to have acted in good faith for purposes of indemnification under this Agreement if Indemnitee's actions are based on the records or books of account of the Company, including financial statements, or on information supplied to Indemnitee by the directors, officers, agents or employees of the Company in the course of their duties, or on the advice of legal counsel for the Company or on information or records given or reports made to the Company by an independent certified public accountant or by an appraiser or other expert selected by the Company. In addition, the knowledge and/or actions, or failure to act, of any director, officer, agent or employee of the Company shall not be imputed to Indemnitee for purposes of determining the right to indemnification under this Agreement.

Whether or not the foregoing provisions of this Section 8(e) are satisfied, it shall in any event be presumed that Indemnitee has at all times acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion, by clear and convincing evidence.

(f) If the person, persons or entity empowered or selected under Section 8 to determine whether Indemnitee is entitled to indemnification shall not have made a determination within forty-five (45) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall be deemed to have been made and Indemnitee shall be entitled to such indemnification, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law; provided, however, that such forty-five day period may be extended for a reasonable time, not to exceed an additional fifteen (15) days, if the person, persons or entity making the determination with respect to entitlement to indemnification in good faith requires such additional time for the obtaining or evaluating documentation and/or information relating thereto; and provided, further, that the foregoing provisions of this Section 8(f) shall not apply if the determination of entitlement to indemnification is to be made by the stockholders of the Company pursuant to Section 8(b) of this Agreement and if (A) within fifteen (15) days after receipt by the Company of the request for such determination the Board of Directors or the Disinterested Directors, if appropriate, resolve to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held

within seventy five (75) days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within fifteen (15) days after such receipt for the purpose of making such determination, such meeting is held for such purpose within sixty (60) days after having been so called and such determination is made thereat.

(g) Indemnitee shall cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any Independent Counsel, member of the Board of Directors, or stockholder of the Company shall act reasonably and in good faith in making a determination under this Agreement of the Indemnitee's entitlement to indemnification. Any costs or expenses (including attorneys' fees and disbursements) incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

(h) The Company acknowledges that a settlement or other disposition short of final judgment may be successful if it permits a party to avoid expense, delay, distraction, disruption and uncertainty. In the event that any action, claim or proceeding to which Indemnitee is a party is resolved in any manner other than by adverse judgment against Indemnitee (including, without limitation, settlement of such action, claim or proceeding with or

without payment of money or other consideration) it shall be presumed that Indemnitee has been successful on the merits or otherwise in such action, suit or proceeding. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion, by clear and convincing evidence.

9. Remedies of Indemnitee.

(a) In the event that (i) a determination is made pursuant to Section 8 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 7 of this Agreement, (iii) no determination of entitlement to indemnification shall have been made pursuant to Section 8(b) of this Agreement within ninety (90) days after receipt by the Company of the request for indemnification, or (iv) payment of indemnification is not made within thirty (30) days after a determination has been made that Indemnitee is entitled to indemnification or such determination is deemed to have been made pursuant to Section 8 of this Agreement, Indemnitee shall be entitled to an adjudication in the Chancery Court of the State of Delaware, or in any other court of competent jurisdiction, of Indemnitee's entitlement to such indemnification. Indemnitee shall commence such proceeding seeking an adjudication within 180 days following the date on which Indemnitee first has the right to commence such proceeding pursuant to this Section 9(a). The Company shall not oppose Indemnitee's right to seek any such adjudication.

(b) In the event that a determination shall have been made pursuant to Section 8(b) of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding commenced pursuant to this Section 9 shall be conducted in all respects as a de novo trial, on the merits and Indemnitee shall not be prejudiced by reason of that adverse determination under Section 8(b).

(c) If a determination shall have been made pursuant to Section 8(b) of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding commenced pursuant to this Section 9, absent a prohibition of such indemnification under applicable law.

(d) In the event that Indemnitee, pursuant to this Section 9, seeks a judicial adjudication of Indemnitee's rights under, or to recover damages for breach of, this Agreement, or to recover under any directors' and officers' liability insurance policies maintained by the Company, the Company shall pay on Indemnitee's behalf, in advance, any and all Expenses paid or incurred by him in such judicial adjudication, regardless of whether Indemnitee ultimately is determined to be entitled to such indemnification, advancement of expenses or insurance recovery. The Company shall, within thirty (30) days after receipt by the Company of a written request therefor from Indemnitee, advance such Expenses to Indemnitee pursuant to comparable procedures as those set forth in Section 7 with respect to advancement of Expenses therein.

(e) The Company shall be precluded from asserting in any judicial proceeding commenced pursuant to this Section 9 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement.

10. Non-Exclusivity; Survival of Rights; Insurance; Subrogation, Primacy of Indemnification.

(a) The rights of indemnification as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Charter Documents, a vote of stockholders or a resolution of directors of the Company, or otherwise. The Company shall not adopt any amendment to the Charter Documents the effect of which would be to deny, diminish or encumber the Indemnitee's rights to identification pursuant to this Agreement, the Charter Documents or applicable law prior to such amendment, alteration or repeal. To the extent that a change in applicable law, whether by statute or judicial decision, permits greater indemnification than would be afforded currently under the Charter Documents and this Agreement, Indemnitee shall enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent the Company maintains D&O Insurance, the Indemnitee shall be covered by such D & O Insurance and any other insurance policy or policies providing liability insurance for directors, officers, employees, or agents or fiduciaries of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise which such person serves at the request of the Company, and Indemnitee shall be covered by such policy or policies in accordance with its or their terms to the maximum extent of the coverage available for any such director, officer, employee or agent under such policy or policies.

(c) In the event of any payment under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

(d) The Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable hereunder if and to the extent that Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise.

[(e) The Company hereby acknowledges that Indemnitee has certain rights to indemnification, advancement of expenses and/or insurance provided by [ ] ([together with any affiliates/collectively], the "Fund Indemnitors"). The Company hereby agrees (i) that it is the indemnitor of first resort (i.e., its obligations to Indemnitee are primary and any obligation of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by Indemnitee are secondary), (ii) that it shall be required to advance the full amount of expenses incurred by Indemnitee and shall be liable for

the full amount of all Expenses, judgments, penalties, fines and amounts paid in settlement to the extent legally permitted and as required by the terms of this Agreement and the Certificate of Incorporation or Bylaws of the Company (or any other agreement between the Company and Indemnitee), without regard to any rights Indemnitee may have against the Fund Indemnitors, and, (iii) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Fund Indemnitors on behalf of Indemnitee with respect to any claim for which Indemnitee has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of Indemnitee against the Company. The Company and Indemnitee agree that the Fund Indemnitors are express third party beneficiaries of the terms of this Section 10(e).]

11. Exception to Right of Indemnification. Notwithstanding any other provision of this Agreement, Indemnitee shall not be entitled to indemnification under this Agreement with respect to any Proceeding brought by Indemnitee, or any claim therein:

(a) for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, except with respect to any excess beyond the amount paid under any insurance policy or other indemnity provision[, provided, that the foregoing shall not affect the rights of Indemnitee or the Fund Indemnitors set forth in Section 10(e) above]; or

(b) for an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Securities Exchange Act of 1934, as amended, or similar provisions of state statutory law or common law; or

(c) in connection with any Proceeding (or any part of any Proceeding) initiated by Indemnitee, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees or other indemnitees, unless (i) the Board of Directors of the Company authorized the Proceeding (or any part of any Proceeding) prior to its initiation or (ii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law.

12. Duration of Agreement. All agreements and obligations of the Company contained herein shall continue during the period Indemnitee is a director of the Company (or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise) and shall continue thereafter so long as Indemnitee shall be subject to any current or future Proceeding (or any proceeding commenced under Section 9) by reason of Indemnitee's Corporate Status, whether or not Indemnitee is acting or serving in any such capacity at the time any liability or expense is incurred for which indemnification can be provided under this Agreement. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto and their respective successors (including any direct or indirect successor by purchase, merger,

consolidation or otherwise to all or substantially all of the business or assets of the Company), assigns, spouses, heirs, executors and personal and legal representatives. This Agreement shall continue in effect regardless of whether Indemnitee continues to serve as an officer or director of the Company or any other Entity at the Company's request.

13. Security. To the extent requested by the Indemnitee and approved by the Board of Directors of the Company, the Company may at any time and from time to time provide security to the Indemnitee for the Company's obligations hereunder through an irrevocable bank line of credit, funded trust or other collateral. Any such security, once provided to the Indemnitee, may not be revoked or released without the prior written consent of the Indemnitee.

14. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve as a director of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving as a director of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof.

16. Severability. If any provision or provisions of this Agreement shall be held by a court of competent jurisdiction to be invalid, void, illegal or otherwise unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby and shall remain enforceable to the fullest extent permitted by applicable law; and (b) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested thereby.

17. Modification and Waiver. Except as provided by Section 10(a) with respect to changes in applicable law that broaden the rights of Indemnitee to be indemnified by the Company, no supplement, modification, termination or amendment of this Agreement shall be binding unless executed in writing by both of the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

18. Notice By Indemnitee. Indemnitee agrees promptly to notify the Company in writing upon being served with or otherwise receiving any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification covered hereunder. The failure to so notify the Company shall

not relieve the Company of any obligation which it may have to the Indemnitee under this Agreement or otherwise unless and only to the extent that such failure or delay materially prejudices the Company.

19. Notices. All notices, requests, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given if (i) delivered by hand and receipted for by the party to whom said notice or other communication shall have been directed, (ii) mailed by certified or registered mail with postage prepaid, on the second business day after the date on which it is so mailed or (iii) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt:

(a) If to Indemnitee, to the address set forth below Indemnitee's signature hereto.

(b) If to the Company, to:

[One Kendall Square
Bldg. 1400E, Suite B14202]
Cambridge, MA [02139]
Attention: President

with a copy to:

WilmerHale
60 State Street
Boston, MA 02109
Attention: Lia Der Marderosian

or to such other address as may have been furnished to Indemnitee by the Company or to the Company by Indemnitee, as the case may be.

20. Identical Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original but all of which together shall constitute one and the same Agreement. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

21. Headings. The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

22. Governing Law. The parties agree that this Agreement shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware without application of the conflict of laws principles thereof.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on and as of the day and year first above written.

CATABASIS PHARMACEUTICALS, INC.

By: _____
Name: _____
Title: _____

INDEMNITEE

_____
Name:
Address:

CREDIT AND SECURITY AGREEMENT

THIS CREDIT AND SECURITY AGREEMENT (this "**Agreement**"), dated as of August 27, 2014 (the "**Closing Date**") by and among **MIDCAP FINANCIAL SBIC, LP**, a Delaware limited partnership ("**MidCap**"), as administrative agent ("**Agent**"), the Lenders listed on the **Credit Facility Schedule** attached hereto and otherwise party hereto from time to time, including, without limitation, **SQUARE 1 BANK**, a North Carolina banking corporation ("**Square 1**") and MidCap (each a "**Lender**", and collectively the "**Lenders**"), and **CATABASIS PHARMACEUTICALS, INC.**, a Delaware corporation and the other entities shown as signatories hereto or that may join this Agreement pursuant to its terms as a Borrower (collectively in the singular, "**Borrower**"), provides the terms on which Lenders agree to lend to Borrower and Borrower shall repay Lenders. The parties agree as follows:

1 ACCOUNTING AND OTHER TERMS

Accounting terms not defined in this Agreement shall be construed in accordance with GAAP. Calculations and determinations must be made in accordance with GAAP. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth in **Section 15**. All other terms contained in this Agreement, unless otherwise indicated, shall have the meaning provided by the Code to the extent such terms are defined therein. All headings numbered without a decimal point are herein referred to as "Articles," and all paragraphs numbered with a decimal point (and all subparagraphs or subsections thereof) are herein referred to as "Sections."

2 CREDIT FACILITIES AND TERMS

2.1 Promise to Pay. Borrower hereby unconditionally promises to pay to each Lender in accordance with each Lender's respective Pro Rata Share of each Credit Facility, the outstanding principal amount of all Credit Extensions made by the Lenders under such Credit Facility and accrued and unpaid interest thereon and any other amounts due hereunder as and when due in accordance with this Agreement.

2.2 Credit Facilities. Subject to the terms and conditions hereof, each Lender, severally, but not jointly, agrees to make available to Borrower Credit Extensions in respect of each Credit Facility set forth opposite such Lender's name on the **Credit Facility Schedule**, in each case not to exceed such Lender's commitment as identified on the **Credit Facility Schedule** (such commitment of each Lender, as it may be amended to reflect assignments made in accordance with this Agreement or terminated or reduced in accordance with this Agreement, its "**Applicable Commitment**", and the aggregate of all such commitments, the "**Applicable Commitments**").

2.3 Term Credit Facilities.

(a) Nature of Credit Facility; Credit Extension Requests. For any Credit Facility identified on the **Credit Facility Schedule** as a term facility (a "**Term Credit Facility**"), Credit Extensions in respect of a Term Credit Facility may be requested by Borrower during the Draw Period for such Term Credit Facility. For any Credit Extension requested under a Term Credit Facility other than on the Closing Date, Agent must receive the completed Credit Extension Form by 12:00 noon (New York time) fifteen (15) Business Days prior to the date of the Credit Extension is to be funded. To the extent any Term Credit Facility proceeds are repaid for any reason, whether voluntarily or involuntarily (including repayments from insurance or condemnation proceeds), Agent and Lenders shall have no obligation to re-advance such sums to Borrower.

(b) Principal Payments. Principal payable on account of a Term Credit Facility shall be payable by Borrower to each Lender in accordance with each Lender's respective Pro Rata Share immediately upon the earliest of (i) the date(s) set forth in the **Amortization Schedule** for such Term Credit Facility, or (ii) the Maturity Date. Except as this Agreement may specifically provide otherwise, all prepayments of Credit Extensions under Term Credit Facilities shall be applied by Agent to the applicable Term Credit Facility in inverse order of maturity. The monthly payments required under the **Amortization Schedule** shall continue in the same amount (for so long as the applicable Term Credit Facility shall

remain outstanding) notwithstanding any partial prepayment, whether mandatory or optional, of the applicable Term Credit Facility.

(c) Mandatory Prepayment. If a Term Credit Facility is accelerated following the occurrence of an Event of Default, Borrower shall immediately pay to Agent, for payment to each Lender in accordance with its respective Pro Rata Share, an amount equal to the sum of: (i) all outstanding principal of the Term Credit Facility and all other Obligations, plus accrued and unpaid interest thereon, (ii) any fees payable under the Fee Letters by reason of such prepayment, (iii) the Applicable Prepayment Fee as specified in the **Credit Facility Schedule** for the Credit Facility being prepaid, and (iv) all other sums that shall have become due and payable, including Protective Advances. Additionally, at the election of Agent (or at the direction of the Required Lenders), Borrower shall prepay the Term Credit Facilities (to be allocated pro rata among the outstanding Credit Extensions under all Term Credit Facilities) in the following amounts: (A) on the date on which any Credit Party (or Agent as loss payee or assignee) receives any casualty proceeds in excess of Five Hundred Thousand Dollars ($500,000) for real or personal property, in respect of assets upon which Agent maintained a Lien, an amount equal to one hundred percent (100%) of such proceeds (net of out-of-pocket expenses and, in the case of personal property, repayment of any permitted purchase money debt or permitted capital lease encumbering the personal property that suffered such casualty), or such lesser portion of such proceeds as Agent shall elect to apply to the Obligations; and (B) upon receipt by any Credit Party of the proceeds of any asset disposition of personal property not made in the Ordinary Course of Business (other than transfers permitted by **Section 7.1**) an amount equal to one hundred percent (100%) of the net cash proceeds of such asset disposition (net of out-of-pocket fees and expenses and repayment of any permitted purchase money debt or permitted capital lease encumbering such asset), or such lesser portion as Agent shall elect to apply to the Obligations. Notwithstanding the foregoing, (a) so long as no Default or Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any casualty policy up to $500,000 in the aggregate with respect to any property loss in any one year, toward the replacement or repair of destroyed or damaged property; provided that any such replaced or repaired property (x) shall be of equal or like value as the replaced or repaired Collateral and (y) shall be deemed Collateral in which Agent and Lenders have been granted a first priority security interest, and (b) after the occurrence and during the continuance of a Default or Event of Default, all proceeds payable under such casualty policy shall, at the option of Agent (or at the direction of the Required Lenders), be payable to Agent, for the ratable benefit of the Lenders, on account of the Obligations.

(d) Permitted Prepayment. Except as provided below, Borrower shall have no right to prepay the Credit Extensions made in respect of a Term Credit Facility. After the Closed Period, if any, for the applicable Term Credit Facility as specified in the **Credit Facility Schedule**, Borrower shall have the option to prepay the Prepayable Amount (as defined below) of a Term Credit Facility advanced by the Lenders under this Agreement, *provided* Borrower

(i) provides written notice to Agent of its election to prepay the Prepayable Amount at least fifteen (15) days prior to such prepayment, and (ii) pays to Agent, for payment to each Lender in accordance with its respective Pro Rata Share, on the date of such prepayment, an amount equal to the sum of (A) the Prepayable Amount plus accrued interest thereon, (B) any fees payable under the Fee Letters by reason of such prepayment, (C) the Applicable Prepayment Fee as specified in the **Credit Facility Schedule** for the Credit Facility being prepaid, and (D) all Protective Advances. The term "**Prepayable Amount**" means all or any portion, as selected by Borrower, of the Credit Extensions under the applicable Term Credit Facility.

2.4 Reserved.

2.5 Reserved.

2.6 Interest and Payments; Administration.

(a) Interest; Computation of Interest. Each Credit Extension shall bear interest on the outstanding principal amount thereof from the date when made until paid in full at a rate per annum equal to the Applicable Interest Rate. Each Lender may, upon the failure of Borrower to pay any fees or interest as required herein, capitalize such interest and fees and begin to accrue interest thereon until paid in full, which such interest shall be at a rate per annum equal to the Applicable Interest Rate unless and until the Default Rate shall otherwise apply. All other Obligations shall bear interest on the outstanding amount thereof from the date they first become payable by Borrower under the Financing Documents until paid in full at a rate per annum equal to the Applicable Interest Rate unless and until the Default Rate shall otherwise apply. Interest on the Credit Extensions and all fees payable under the Financing Documents shall be computed on the basis of a 360-day year and the actual number of days elapsed in the period during which such interest accrues. In computing interest on any Credit Extension or other advance, the date of the making of such Credit Extension or advance shall be included and the date of payment shall be excluded; *provided, however*, that if any Credit Extension or advance is repaid on the same day

on which it is made, such day shall be included in computing interest on such Credit Extension or advance. Agent shall determine (which determination shall, absent manifest error in calculation, be final, conclusive and binding upon all parties) the interest rate that shall apply to the Credit Extensions.

(b) Default Rate. Upon the election of Agent following the occurrence and during the continuance of an Event of Default, Obligations shall bear interest at a rate per annum which is five hundred basis points (5.00%) above the rate that is otherwise applicable thereto (the "**Default Rate**"). Payment or acceptance of the increased interest rate provided in this subsection is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies of Agent or Lenders.

(c) Payments Generally. Except as otherwise provided in this **Section 2.6(c)**, all payments in respect of the Obligations shall be made to Agent for the account of the applicable Lenders in accordance with their Pro Rata Share. Payments of principal and interest in respect of any Credit Facility identified on the **Credit Facility Schedule** as "Term" shall be made to each applicable Lender. All Obligations are payable upon demand of Agent in the absence of any other due date specified herein. All fees payable under the Financing Documents shall be deemed non-refundable as of the date paid. Any payment required to be made to Agent or a Lender under this Agreement may be made by debit or automated clearing house payment initiated by Agent or such Lender from any of Borrower's deposit accounts, including the Designated Funding Account, and Borrower hereby authorizes Agent and each Lender to debit any such accounts for any amounts Borrower owes hereunder when due. Without limiting the foregoing, Borrower shall tender to Agent and Lenders any authorization forms as Agent or any Lender may reasonably require to implement such debit or automated clearing house payment. These debits or automated clearing house payments shall not constitute a set-off. Payments of principal and/or interest received after 12:00 noon New York time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment is due the next Business Day and additional fees or interest, as applicable, shall continue to accrue until paid. All payments to be made by Borrower under any Financing Document shall be made without set-off, recoupment or counterclaim, in lawful money of the United States and in immediately available funds. The balance of the Obligations, as recorded in Agent's books and records at any time, shall be conclusive and binding evidence of the amounts due and owing to Agent and Lenders by each Borrower absent manifest error; *provided, however*, that any failure to so record or any error in so recording shall not limit or otherwise affect any Borrower's duty to pay all amounts owing hereunder or under any Financing Document. Agent shall endeavor to provide Borrower with a monthly statement regarding the Credit Extensions (but neither Agent nor any Lender shall have any liability if Agent shall fail to provide any such statement). Unless Borrower notifies Agent of any objection to any such statement (specifically describing the basis for such objection) within ninety (90) days after the date of receipt thereof, it shall be deemed final, binding and conclusive upon Borrower in all respects as to all matters reflected therein.

(d) Interest Payments; Maturity Date. Commencing on the first (1st) Payment Date following the funding of a Credit Extension, and continuing on the Payment Date of each successive month thereafter through and including the Maturity Date, Borrower shall make monthly payments of interest, in arrears, calculated as set forth in this **Section 2.6**. All unpaid principal and accrued interest is due and payable in full on the Maturity Date or any earlier date specified herein. If the Obligations are not paid in full on or before the Maturity Date, all interest thereafter accruing shall be payable immediately upon accrual.

(e) Fees. Borrower shall pay, as and when due and payable under the terms of the Fee Letters, to Agent and each Lender, for their own accounts and not for the benefit of any other Lenders, the fees set forth in the Fee Letters.

(f) Protective Advances. Borrower shall pay to Agent for the account of Lenders all Protective Advances (including reasonable attorneys' fees and expenses for documentation and negotiation of this Agreement, the Warrants and the other Financing Documents) when due under any Financing Document (and in the absence of any other due date specified herein, such Protective Advances shall be due upon demand).

(g) Maximum Lawful Rate. In no event shall the interest charged hereunder with respect to the Obligations exceed the maximum amount permitted under the Laws of the State of Maryland. Notwithstanding anything to the contrary in any Financing Document, if at any time the rate of interest payable hereunder (the "**Stated Rate**") would exceed the highest rate of interest permitted under any applicable Law to be charged (the "**Maximum Lawful Rate**"), then for so long as the Maximum Lawful Rate would be so exceeded, the rate of interest payable shall be equal to the Maximum Lawful Rate; *provided, however*, that if at any time thereafter the Stated Rate is less than the Maximum Lawful Rate,

Borrower shall, to the extent permitted by Law, continue to pay interest at the Maximum Lawful Rate until such time as the total interest received is equal to the total interest which would have been received had the Stated Rate been (but for the operation of this provision) the interest rate payable. Thereafter, the interest rate payable shall be the Stated Rate unless and until the Stated Rate again would exceed the Maximum Lawful Rate, in which event this provision shall again

apply. In no event shall the total interest received by any Lender exceed the amount which it could lawfully have received, had the interest been calculated for the full term hereof at the Maximum Lawful Rate. If, notwithstanding the prior sentence, any Lender has received interest hereunder in excess of the Maximum Lawful Rate, such excess amount shall be applied to the reduction of the principal balance of such Lender's Credit Extensions or to other amounts (other than interest) payable hereunder, and if no such Credit Extensions or other amounts are then outstanding, such excess or part thereof remaining shall be paid to Borrower. In computing interest payable with reference to the Maximum Lawful Rate applicable to any Lender, such interest shall be calculated at a daily rate equal to the Maximum Lawful Rate *divided by* the number of days in the year in which such calculation is made.

(h) Taxes; Additional Costs.

(i) All payments of principal and interest on the Obligations and all other amounts payable hereunder shall be made free and clear of and without deduction for any present or future income, excise, stamp, documentary, payroll, employment, property or franchise taxes and other taxes, fees, duties, levies, assessments, withholdings or other charges of any nature whatsoever (including interest and penalties thereon) imposed by any taxing authority, excluding taxes imposed on or measured by Agent's or any Lender's net income, franchise taxes, and branch profits taxes, in each case, imposed by the jurisdictions under which Agent or such Lender is organized or conducts business (other than solely as the result of entering into any of the Financing Documents or taking any action thereunder) (all non-excluded items being called "**Taxes"**). If any withholding or deduction from any payment to be made by any Borrower hereunder is required in respect of any Taxes pursuant to any applicable Law, then Borrower will: (i) pay directly to the relevant authority the full amount required to be so withheld or deducted; (ii) promptly forward to Agent an official receipt or other documentation satisfactory to Agent (or Borrower, as the case may be) evidencing such payment to such authority; and (iii) pay to Agent for the account of Agent and Lenders such additional amount or amounts as is necessary to ensure that the net amount actually received by Agent and each Lender will equal the full amount Agent and such Lender would have received had no such withholding or deduction for Taxes been required. If any Taxes are directly asserted against Agent or any Lender with respect to any payment received by Agent or such Lender hereunder, Agent or such Lender may timely pay such Taxes and Borrower will promptly pay such additional amounts (including any penalty, interest or expense) as is necessary in order that the net amount received by such Person after the payment of such Taxes (including any Taxes on such additional amount) shall equal the amount such Person would have received had such Taxes not been asserted so long as such amounts have accrued on or after the day which is two hundred seventy (270) days prior to the date on which Agent or such Lender first made written demand therefor.

(ii) If any Borrower fails to pay under this subsection (h) any Taxes when due to the appropriate taxing authority or fails to remit to Agent, for the account of Agent and the respective Lenders, the required receipts or other required documentary evidence, Borrower shall indemnify Agent and Lenders for any incremental Taxes, interest or penalties that may become payable by Agent or any Lender as a result of any such failure.

(iii) Each Lender that is organized under the laws of a jurisdiction other than the United States, a state thereof, or the District of Columbia (such Lender a "**Foreign Lender**") shall execute and deliver to each of Borrower and Agent, on or prior to the date on which such Lender becomes a party hereto or purports to become an assignee of an interest as a Lender under this Agreement (and from time to time thereafter as required by applicable law or upon the reasonable request of Borrower or Agent), one or more (as Borrower or Agent may reasonably request) United States Internal Revenue Service Forms W-8ECI, W-8BEN, W-8BEN-E, W-8IMY (as applicable) and other applicable forms, certificates or documents prescribed by the United States Internal Revenue Service or reasonably requested by Borrower or Agent certifying as to such Lender's entitlement to a complete exemption from withholding or deduction of Taxes. Borrower shall not be required to pay additional amounts to any Lender pursuant to this **subsection (h)** with respect to United States withholding and income Taxes to the extent that the obligation to pay such additional amounts would not have arisen but for the failure of such Lender to comply with this paragraph other than a failure due to such Lender being unable to comply with this paragraph as a result of a change in law.

(iv) Each Lender that is not a Foreign Lender shall execute and deliver to each of Borrower and Agent, on or prior to the date on which such Lender becomes a party hereto or purports to become an assignee of an interest

as a Lender under this Agreement (and from time to time thereafter as required by applicable law or upon the reasonable request of Borrower or Agent), one or more (as Borrower or Agent may reasonably request) United States Internal Revenue Service Forms W-9 and other applicable forms, certificates or documents prescribed by the United States Internal Revenue Service or reasonably requested by Borrower or Agent certifying as to such Lender's entitlement to a complete exemption from withholding or deduction of Taxes. Borrower shall not be required to pay additional amounts to any Lender pursuant to this **subsection (h)** with respect to United States withholding and income Taxes to the extent that the obligation to pay such additional amounts would not have arisen but for the failure of such Lender to comply with this paragraph, other than a failure due to such Lender being unable to comply with this paragraph as a result of a change in law.

(v) If a payment made to a Lender under any Financing Document would be subject to United States federal withholding tax imposed by FATCA if such Lender were to fail to comply with the applicable reporting requirements of FATCA (including those contained in Section 1471(b) or 1472(b) of the Internal Revenue Code, as applicable), such Lender shall deliver to Borrower and Agent at the time or times prescribed by law and at such time or times reasonably requested by Borrower or Agent such documentation prescribed by applicable law (including as prescribed by Section 1471(b)(3)(C)(i) of the Internal Revenue Code) and such additional documentation reasonably requested by Borrower or Agent as may be necessary for Borrower and Agent to comply with their obligations under FATCA and to determine that such Lender has complied with such Lender's obligations under FATCA or to determine the amount to deduct and withhold from such payment. For purposes of the preceding sentence, "FATCA" shall include any amendments made to FATCA after the date of this Agreement. Borrower shall not be required to pay additional amounts to any Lender pursuant to this **subsection (h)** with respect to United States withholding taxes imposed by FATCA.

(vi) If any Lender shall determine in its commercially reasonable judgment that the adoption or taking effect of, or any change in, any applicable Law regarding capital adequacy, in each instance, after the Closing Date, or any change after the Closing Date in the interpretation, administration or application thereof by any Governmental Authority, central bank or comparable agency charged with the interpretation, administration or application thereof, or the compliance by any Lender or any Person controlling such Lender with any request, guideline or directive regarding capital adequacy (whether or not having the force of law) of any such Governmental Authority, central bank or comparable agency adopted or otherwise taking effect after the Closing Date, has or would have the effect of reducing the rate of return on such Lender's or such controlling Person's capital as a consequence of such Lender's obligations hereunder to a level below that which such Lender or such controlling Person could have achieved but for such adoption, taking effect, change, interpretation, administration, application or compliance (taking into consideration such Lender's or such controlling Person's policies with respect to capital adequacy) then from time to time, upon written demand by such Lender (which demand shall be accompanied by a statement setting forth the basis for such demand and a calculation of the amount thereof in reasonable detail, a copy of which shall be furnished to Agent), Borrower shall promptly pay to such Lender such additional amount as will compensate such Lender or such controlling Person for such reduction, so long as such amounts have accrued on or after the day which is two hundred seventy (270) days prior to the date on which such Lender first made demand therefor; *provided*, *however*, that notwithstanding anything in this Agreement to the contrary, (A) the Dodd-Frank Wall Street Reform and Consumer Protection Act and all requests, rules, guidelines or directives thereunder or issued in connection therewith and (B) all requests, rules, guidelines or directives promulgated by the Bank for International Settlements, the Basel Committee on Banking Supervision (or any

successor or similar authority) or the United States or foreign regulatory authorities, in each case pursuant to Basel III, shall in each case be deemed to be a "change in applicable Law", regardless of the date enacted, adopted or issued.

(vii) If any Lender requires compensation under this **subsection (h)**, or requires any Borrower to pay any additional amount to any Lender or any Governmental Authority for the account of any Lender pursuant to this **subsection (h)**, then, upon the written request of Borrower, such Lender shall use reasonable efforts to designate a different lending office for funding or booking its Credit Extensions hereunder or to assign its rights and obligations hereunder (subject to the terms of this Agreement) to another of its offices, branches or affiliates, if, in the judgment of such Lender, such designation or assignment (A) would eliminate or materially reduce amounts payable pursuant to any such subsection, as the case may be, in the future, and (B) would not subject such Lender to any unreimbursed cost or expense and would not otherwise be materially disadvantageous to such Lender (as determined in its sole discretion). Borrower hereby agrees to pay all reasonable costs and expenses incurred by any Lender in connection with any such designation or assignment.

(i) Administrative Fees and Charges.

(i) Borrower shall pay to Agent, for its own account and not for the benefit of any other Lenders, all reasonable fees and expenses in connection with audits and inspections of the books and records of the Credit Parties, audits, valuations or appraisals of the Collateral, audits of Borrower's compliance with applicable Laws and such other matters as Agent shall deem appropriate, which shall be due and payable on the first Business Day of the month following the date of issuance by Agent of a written request for payment thereof to any Borrower; *provided*, *that*, as long as no Default has occurred within the preceding twelve (12) months, Agent shall be entitled to such reimbursement for no more than one audit, valuation, appraisal and inspection per calendar year.

(ii) If payments of principal or interest due on the Obligations, or any other amounts due hereunder or under the other Financing Documents, are not timely made and remain overdue for a period of five (5) days, Borrower, without notice or demand by Agent, promptly shall pay to Agent, for its own account and not for the benefit of any other Lenders, as additional compensation to Agent in administering the Obligations, an amount equal to five percent (5.0%) of each delinquent payment.

2.7 Secured Promissory Notes. At the election of any Lender made as to each Credit Facility for which it has made Credit Extensions, each Credit Facility shall be evidenced by one or more secured promissory notes in form and substance reasonably satisfactory to Agent and Lenders (each a "**Secured Promissory Note**"). Upon receipt of an affidavit of an officer of and reasonable and customary indemnification by a Lender as to the loss, theft, destruction, or mutilation of its Secured Promissory Note, Borrower shall issue, in lieu thereof, a replacement Secured Promissory Note in the same principal amount thereof and of like tenor.

3 CONDITIONS OF CREDIT EXTENSIONS

3.1 Conditions Precedent to Initial Credit Extension. Each Lender's obligation to make the initial advance in respect of a Credit Facility is subject to the condition precedent that Agent shall consent to or shall have received, in form and substance satisfactory to Agent, such documents, and completion of such other matters, as Agent may reasonably deem necessary or appropriate, including, without limitation, all items listed on the **Closing Deliveries Schedule** attached hereto.

3.2 Conditions Precedent to all Credit Extensions. The obligation of each Lender to make each Credit Extension, including the initial Credit Extension, is subject to the following conditions precedent:

(a) satisfaction of all Applicable Funding Conditions for the applicable Credit Extension as set forth in the Credit Facility Schedule, each in form and substance reasonably satisfactory to Agent and each Lender;

(b) timely receipt by the Agent and each Lender of an executed Credit Extension Form in the form attached hereto;

(c) (i) for Credit Extensions made on the Closing Date, the representations and warranties in **Article 5** and elsewhere in the Financing Documents shall be true, correct and complete in all respects on the Closing Date; *provided*, *however*, that those representations and warranties expressly referring to a specific date shall be true, correct and complete in all respects as of such date; and

(ii) for Credit Extensions made after the Closing Date, if any, the representations and warranties in **Article 5** and elsewhere in the Financing Documents shall be true, correct and complete in all material respects on the date of the Credit Extension Form and on the Funding Date of each Credit Extension; *provided*, *however*, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and *provided*, *further* that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date. Each Credit Extension is Borrower's representation and warranty on that date that the representations and warranties in **Article 5** and elsewhere in the Financing Documents remain true, accurate and complete in all material respects; *provided*, *however*, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and *provided*, *further* that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date;

(d) no Default or Event of Default shall have occurred and be continuing or result from the Credit Extension;

(e) Agent shall be satisfied with the results of any searches conducted under **Section 3.5**;

(f) receipt by Agent of such evidence as Agent shall reasonably request to confirm that the deliveries made in **Section 3.1** remain current, accurate and in full force and effect, or if not, updates thereto, each in form and substance reasonably satisfactory to Agent (and, in each case, except items where the Closing Deliveries Schedule specifically states that such items are "(*Required for initial Credit Extension*)"); and

(g) as determined in such Lender's reasonable discretion, there has not been any Material Adverse Change or any material adverse deviation by Borrower from the most recent board approved financial plan of Borrower provided to Agent and Lenders pursuant to **Section 6.2(a)(iii)**.

3.3 Method of Borrowing. Each Credit Extension in respect of each Credit Facility shall be in an amount at least equal to the applicable Minimum Credit Extension Amount for such Credit Facility as set forth in the **Credit Facility Schedule** or such lesser amount as shall remain undisbursed under the Applicable Commitments for such Credit Facility. The date of funding for any requested Credit Extension shall be a Business Day. To obtain a Credit Extension, Borrower shall deliver to Agent a completed Credit Extension Form executed by a Responsible Officer. Agent may rely on any notice given by a person whom Agent reasonably believes is a Responsible Officer or designee thereof. Agent and Lenders shall have no duty to verify the authenticity of any such notice.

3.4 Funding of Credit Facilities. Upon the terms and subject to the conditions set forth herein, each Lender, severally and not jointly, shall make available to Agent its Pro Rata Share of the requested Credit Extension, in lawful money of the United States of America in immediately available funds, prior to 11:00 a.m. (New York time) on the specified date for the Credit Extension. Agent shall, unless it shall have determined that one of the conditions set forth in **Section 3.1** or **3.2**, as applicable, has not been satisfied, by 2:00 p.m. (New York time) on such day, credit the amounts received by it in like funds to Borrower by wire transfer to the Designated Funding Account (or to the account of Borrower in respect of the Obligations, if the Credit Extension is being made to pay an Obligation of Borrower). A Credit Extension made prior to the satisfaction of any conditions set forth in **Section 3.1** or **3.2** shall not constitute a waiver by Agent or Lenders of Borrower's obligation to satisfy such conditions, and any such Credit Extension made in the absence of such satisfaction shall be made in Agent's discretion.

3.5 Searches. Before the Closing Date, and thereafter (as and when determined by Agent in its reasonable discretion), Agent shall have the right to perform, all at Borrower's expense, the searches described in clauses (a), (b), and (c) below against Borrower and any other Credit Party, the results of which are to be consistent with Borrower's representations and warranties under this Agreement and the reasonably satisfactory results of which shall be a condition precedent to all Credit Extensions requested by Borrower: (a) title investigations, UCC searches and fixture filings searches; (b) judgment, pending litigation, federal tax lien, personal property tax lien, and corporate and partnership tax lien searches, in each jurisdiction searched under clause (a) above; and (c) searches of applicable corporate, limited liability company, partnership and related records to confirm the continued existence, organization and good standing of the applicable Person and the exact legal name under which such Person is organized.

4 CREATION OF SECURITY INTEREST

4.1 Grant of Security Interest. Borrower hereby grants Agent, for the ratable benefit of the Lenders, to secure the payment and performance in full of all of the Obligations, a continuing security interest in, and pledges to Agent, for the ratable benefit of the Lenders, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof. Borrower represents, warrants, and covenants that the security interest granted herein is and shall at all times continue to be a first priority perfected security interest in the Collateral, subject only to Permitted Liens that may have priority by operation of applicable Law or by the terms of a written intercreditor or subordination agreement entered into by Agent.

4.2 Representations and Covenants.

(a) As of the Closing Date, Borrower has no ownership interest in any Chattel Paper, letter of credit rights, commercial tort claims, Instruments, documents or investment property (other than cash equivalents on deposit in a Collateral Account subject to a Control Agreement (to the extent required under **Section 6.6**) and equity interests in any Subsidiaries of Borrower disclosed on the **Disclosure Schedule** attached hereto).

(b) Borrower shall deliver to Agent all tangible Chattel Paper and all Instruments and documents owned by any Borrower and constituting part of the Collateral duly endorsed and accompanied by duly executed instruments of transfer or assignment, all in form and substance satisfactory to Agent. Borrower shall provide Agent with "control" (as in the Code) of all electronic Chattel Paper owned by any Borrower and constituting part of the Collateral by having Agent identified as the assignee on the records pertaining to the single authoritative copy thereof and otherwise complying with the applicable elements of control set forth in the UCC. Borrower also shall deliver to Agent all security agreements securing any such Chattel Paper and securing any such Instruments. Borrower will mark conspicuously all such Chattel Paper and all such Instruments and Documents with a legend, in form and substance satisfactory to Agent, indicating that such Chattel Paper and such Instruments and Documents are subject to the security interests and Liens in favor of Agent created pursuant to this Agreement and the Financing Documents.

(c) Borrower shall deliver to Agent all letters of credit on which any Borrower is the beneficiary and which give rise to letter of credit rights owned by such Borrower which constitute part of the Collateral in each case duly endorsed and accompanied by duly executed instruments of transfer or assignment, all in form and substance satisfactory to Agent. Borrower shall take any and all actions as may be necessary or desirable, or that Agent may request, from time to time, to cause Agent to obtain exclusive "control" (as defined in the Code) of any such letter of credit rights in a manner acceptable to Agent.

(d) Borrower shall promptly advise Agent upon any Borrower becoming aware that it has any interests in any commercial tort claim that constitutes part of the Collateral, which such notice shall include descriptions of the events and circumstances giving rise to such commercial tort claim and the dates such events and circumstances occurred, the potential defendants with respect such commercial tort claim and any court proceedings that have been instituted with respect to such commercial tort claims, and Borrower shall, with respect to any such commercial tort claim, execute and deliver to Agent such documents as Agent shall request to perfect, preserve or protect the Liens, rights and remedies of Agent with respect to any such commercial tort claim.

(e) Except for Inventory in an aggregate amount of Two Hundred Fifty Thousand Dollars ($250,000), no Inventory or other Collateral shall at any time be in the possession or control of any warehouse, consignee, bailee or any of Borrower's agents or processors without prior written notice to Agent and the receipt by Agent, prior to the commencement of such possession or control, of warehouse receipts, consignment agreements or bailee lien waivers (as applicable) in form and substance reasonably satisfactory to Agent, reflecting that Borrower has notified any such warehouse, consignee, bailee, agent or processor of the security interests and Liens in favor of Agent created pursuant to this Agreement and the Financing Documents, and has instructed such Person to hold all such Collateral for Agent's account subject to Agent's instructions and including an acknowledgement from such Person that such Person holds the Collateral for Agent's benefit, and any other waivers and agreements reasonably requested by the Agent.

(f) Upon request of Agent, Borrower shall promptly deliver to Agent any and all certificates of title, applications for title or similar evidence of ownership of all such tangible personal property and shall cause Agent to be named as lienholder on any such certificate of title or other evidence of ownership. Borrower shall not permit any such tangible personal property to become fixtures to real estate unless such real estate is subject to a Lien in favor of Agent.

(g) Each Borrower hereby authorizes Agent to file without the signature of such Borrower one or more UCC financing statements relating to its Liens on all or any part of the Collateral, which financing statements may list Agent as the "secured party" and such Borrower as the "debtor" and which describe and indicate the collateral covered thereby as all or any part of the Collateral under the Financing Documents in such jurisdictions as Agent from time to

time determines are appropriate, and to file without the signature of such Borrower any continuations of or corrective amendments to any such financing statements, in any such case in order for Agent to perfect, preserve or protect the Liens, rights and remedies of Agent with respect to the Collateral. Each Borrower also ratifies its authorization for Agent to have filed in any jurisdiction any initial financing statements or amendments thereto if filed prior to the date hereof. Any financing statement may include a notice that any disposition of the Collateral, by either Borrower or any other Person, shall be deemed to violate the rights of Agent and the Lenders under the UCC.

(h) As of the Closing Date, no Borrower holds, and after the Closing Date Borrower shall promptly notify Agent in writing upon creation or acquisition by any Borrower of, any Collateral which constitutes a claim against any Governmental Authority, including, without limitation, the federal government of the United States or any instrumentality or agency thereof, the assignment of which claim is restricted by any applicable Law, including, without limitation, the federal Assignment of Claims Act and any other comparable Law. Upon the request of Agent, Borrower shall take such steps as may be necessary or desirable, or that Agent may request, to comply with any such applicable Law.

(i) Borrower shall furnish to Agent from time to time any statements and schedules further identifying or describing the Collateral and any other information, reports or evidence concerning the Collateral as Agent may reasonably request from time to time.

5 REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows on the Closing Date and the date of each Credit Extension:

5.1 Due Organization, Authorization: Power and Authority.

(a) Each Credit Party and each Subsidiary of any Credit Party is duly existing and in good standing, as a Registered Organization in its respective jurisdiction of formation. Each Credit Party and each Subsidiary of any Credit Party is qualified and licensed to do business and is in good standing in any jurisdiction in which the conduct of its business or its ownership of property requires that it be qualified except where the failure to do so could not reasonably be expected to have a Material Adverse Change. The Financing Documents have been duly authorized, executed and delivered by each Credit Party and constitute legal, valid and binding agreements enforceable in accordance with their terms. The execution, delivery and performance by each Credit Party of each Financing Document executed or to be executed by it is in each case within such Credit Party's powers.

(b) The execution, delivery and performance by each Credit Party of the Financing Documents to which it is a party do not (i) conflict with any of such Credit Party's organizational documents; (ii) contravene, conflict with, constitute a default under or violate any Law; (iii) contravene, conflict or violate any applicable order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which such Credit Party or any of its property or assets may be bound or affected; (iv) require any action by, filing, registration, or qualification with, or Required Permit from, any Governmental Authority (except such Required Permits which have already been obtained and are in full force and effect); or (v) constitute a default under or conflict with any Material Agreement. No Credit Party is in default under any agreement to which it is a party or by which it is bound in which the default could reasonably be expected to have a Material Adverse Change.

5.2 Litigation. Except as disclosed on the **Disclosure Schedule** or, after the Closing Date, pursuant to **Section 6.7**, there are no actions, suits, proceedings or, to the knowledge of any Credit Party, investigations pending or, to the knowledge of the Responsible Officers, threatened in writing by or against any Credit Party or any Subsidiary of any Credit Party which involves the reasonable possibility of any judgment or liability of more than Two Hundred Fifty Thousand Dollars ($250,000.00) or that could reasonably be expected to result in a Material Adverse Change, or which questions the validity of the Financing Documents, or the other documents required thereby or any action to be taken pursuant to any of the foregoing.

5.3 No Material Deterioration in Financial Condition; Financial Statements.

(a) There has been no material adverse deterioration in the consolidated financial condition of any Credit Party from the most recent financial statements submitted to Agent or any Lender; provided, however, the parties agree that losses and reductions in cash that are consistent, in the reasonable discretion of the Agent and the Required Lenders, with the Borrower's financial plan, as updated from time to time, and provided to Agent shall not, on its own, constitute a material deterioration in Borrower's consolidated financial position. There has been no material adverse deviation from the most recent annual board approved financial plan and projections of Borrower, as updated from time to time and delivered to Agent and Lenders.

(b) All financial statements for the Credit Parties, delivered to Agent or any Lender fairly present, in conformity with GAAP, in all material respects the consolidated financial condition and consolidated results of operations of such Credit Party, except for the absence of footnotes and subject to year-end adjustment, in the case of unaudited financial statements.

5.4 Solvency. The fair salable value of each Credit Party's assets (including goodwill *minus* disposition cost(s) exceeds the fair value of its liabilities. After giving effect to the transactions described in this Agreement, (a) no Credit Party is left with unreasonably small capital in relation to its business as presently conducted, and (b) each Credit Party is able to pay its debts (including trade debts) as they mature.

5.5 Subsidiaries; Investments. Borrower and its Subsidiaries do not own any stock, partnership interest or other equity securities, except for Permitted Investments.

5.6 Tax Returns and Payments; Pension Contributions. Each Credit Party and any Subsidiary of any Credit Party has timely filed all required tax returns and reports (or extensions thereof), and each Credit Party and any Subsidiary of any Credit Party has timely paid all foreign, federal, state (other than sales and use taxes) and material local and material sales and use taxes, assessments, deposits and contributions owed by such Credit Party or Subsidiary of a Credit Party, as applicable (for purposes hereof, "material" shall include any taxes, assessments, deposits and contributions in excess of $25,000). Borrower may defer payment of any contested taxes, provided, however, that Borrower (a) in good faith contests its obligation to pay the taxes by appropriate proceedings promptly and diligently instituted and conducted, (b) notifies Agent in writing of the commencement of, and any material developments in, the proceedings, (c) posts bonds or takes any other steps required to prevent the governmental authority levying such contested taxes from obtaining a Lien upon any of the Collateral (except for a Permitted Lien) and (d) makes appropriate reserves on its financial statements in conformity with GAAP. Borrower is unaware of any claims or adjustments proposed for any of prior tax years of any Credit Party or any Subsidiary of any Credit Party which could reasonably be expected to result in additional taxes

becoming due and payable by such Credit Party. Each Credit Party and any Subsidiary of any Credit Party has paid all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms, and no Credit Party or any Subsidiary of any Credit Party has withdrawn from participation in, or has permitted partial or complete termination of, or permitted the occurrence of any other event with respect to, any such plan which could reasonably be expected to result in any liability of such Credit Party or Subsidiary, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other Governmental Authority.

5.7 Disclosure Schedule. All information set forth in the **Disclosure Schedule** is true, accurate and complete as of the date hereof. All information set forth in the Perfection Certificate is true, accurate and complete as of the date hereof.

6 AFFIRMATIVE COVENANTS

Borrower covenants and agrees as follows:

6.1 Organization and Existence; Government Compliance.

(a) Each Credit Party and any Subsidiary of any Credit Party shall maintain its legal existence and good standing in its respective jurisdiction of formation and maintain qualification in each jurisdiction in which the failure to so qualify could reasonably be expected to have a Material Adverse Change. If a Credit Party is not now a Registered Organization but later becomes one, Borrower shall promptly notify Agent of such occurrence and provide Agent with such Credit Party's organizational identification number.

(b) Each Credit Party and any Subsidiary of any Credit Party shall comply with all Laws, ordinances and regulations to which it or its business locations is subject, the noncompliance with which could reasonably be expected to result in a Material Adverse Change. Each Credit Party and any Subsidiary of any Credit Party shall obtain and keep in full force and effect and comply with all of the Required Permits, except where failure to have or maintain compliance with or effectiveness of such Required Permit could not reasonably be expected to result in a Material Adverse Change. Each Credit Party and any Subsidiary of any Credit Party shall promptly provide copies of any such obtained Required Permits to Agent. Borrower shall notify Agent within three (3) Business Days (but in any event prior to Borrower submitting any requests for

Credit Extensions) of the occurrence of any facts, events or circumstances known to a Borrower, whether threatened, existing or pending, that could reasonably be expected to cause any Required Permit to become materially limited or suspended or revoked.

6.2 Financial Statements, Reports, Certificates.

(a) Each Credit Party shall deliver to Agent and each Lender: (i) (A)(1) prior to a Qualifying IPO and (2) following a Qualifying IPO for any month when Borrower does not at all times have a Cash/Debt Ratio of 2.00 to 1.00 or greater, as soon as available, but no later than thirty (30) days after the last day of each month, a company prepared consolidated and, in the event of the creation and joinder, as applicable, of any additional Borrowers or Subsidiaries in accordance with this Agreement, consolidating balance sheet, income statement and cash flow statement covering such Credit Party's consolidated operations for such month certified by a Responsible Officer and in a form acceptable to Agent and each Lender, or (B) following a Qualifying IPO, but only so long as and at all times during such quarter Borrower has a Cash/Debt Ratio of 2.00 to 1.00 or greater, as soon as available, but no later than (i) forty-five (45) days after the last day of each quarter, a company prepared consolidated and, in the event of the creation and joinder, as applicable, of any additional Borrowers or Subsidiaries in accordance with this Agreement, consolidating balance sheet, income statement and cash flow statement covering such Credit Party's consolidated operations for such quarter certified by a Responsible Officer and (2) thirty (30) days after the last day of each month during such quarter (not including any month which is also the end of a quarter (i.e. the months ending March 31, June 30, September 30 and December 31 of each year)), a summary of Borrower's cash and cash equivalents, in the case of clauses (1) and (2), in a form acceptable to Agent and each Lender; (ii) (x) on or before September 30, 2014 for the fiscal year ended December 31, 2013, and (y) for each fiscal year thereafter, as soon as available, but no later than one hundred eighty (180) days after the last day of a Credit Party's fiscal year, audited consolidated and consolidating financial statements prepared under GAAP, consistently applied, together with an unqualified opinion (except that such opinion may be qualified with a going concern statement based solely as a result of recurring losses and net capital deficiencies of the Borrower) on the financial statements from an independent certified public accounting firm acceptable to Agent and each Lender in its reasonable discretion; (iii) as soon as available but no later than the earlier of ninety (90) days after the last day of such Credit Party's fiscal year and five (5) days following approval by such Credit Party's governing board, and as amended and/or updated, such Credit Party's financial plan and projections for current fiscal year; (iv) within five (5) Business Days of delivery, copies of all statements, reports and notices made available to all of such Credit Party's security holders or to any holders of Subordinated Debt; (v) in the event that such Credit Party is or becomes subject to the reporting requirements under the Securities Exchange Act of 1934, as amended, within five (5) days of filing, all reports on Form 10-K, 10-Q and 8-K filed with the Securities and Exchange Commission ("**SEC**") or a link thereto on such Credit Party's or another website on the Internet; (vi) budgets, sales projections, operating plans and other financial information reasonably requested by Agent or any Lender; (vii) as soon as available, but no later than thirty (30) days after the last day of each month, copies of the month-end account statements for each Collateral Account maintained by a Credit Party, which statements may be provided to Agent and each Lender by Borrower or directly from the applicable institution(s); (viii) upon request by Agent or any Lender, an update, in form and detail reasonably satisfactory to Agent or such Lender, with respect to Borrower's clinical milestones; and (ix) such additional information, reports or statements regarding the Credit Parties, any Required Permits, or their respective businesses, contractors and subcontractors as Agent or any Lender may from time to time reasonably request.

(b) on a monthly basis, Borrower shall deliver to Agent and each Lender, together with the monthly or quarterly financial statements and/or monthly cash summaries, as applicable in accordance with **Section 6.2(a)** above, a duly completed Compliance Certificate signed by a Responsible Officer.

(c) Borrower shall cause each Credit Party to keep proper books of record and account in accordance with GAAP in which full, true and correct entries shall be made of all dealings and transactions in relation to its business and activities. Upon prior written notice and during business hours (which such limitations shall not apply if a Default or Event of Default has occurred), Borrower shall allow, and cause each Credit Party to allow, Agent and Lenders to visit and inspect any properties of a Credit Party, to examine and make abstracts or copies from any Credit Party's books, to conduct a collateral audit and analysis of its operations and the Collateral to verify the amount and age of the accounts, the identity and credit of the respective account debtors, to review the billing practices of the Credit Party and to discuss its respective affairs, finances and accounts with their respective officers, employees and independent public accountants as often as may reasonably be desired. Borrower shall reimburse Agent and each Lender for all reasonable costs and expenses associated with such visits and inspections; *provided*, *however*, that Borrower shall be required to reimburse Agent and each Lender for

such costs and expenses for no more than one (1) such visit and inspection per twelve (12) month period unless a Default or Event of Default has occurred during such period.

(d) Borrower shall, and shall cause each Credit Party to, deliver to Agent and each Lender, within ten (10) Business Days after the same are sent or received, copies of all material correspondence, reports, documents and other filings with any Governmental Authority that could reasonably be expected to have a material adverse effect on any of the Required Permits material to Borrower's business or otherwise on the operations of Borrower or any of its Subsidiaries.

6.3 Maintenance of Property. Borrower shall cause all equipment and other tangible personal property other than Inventory to be maintained and preserved in the same condition, repair and in working order as of the date hereof, ordinary wear and tear excepted, and shall promptly make or cause to be made all repairs, replacements and other improvements in connection therewith that are necessary or desirable to such end. Borrower shall cause each Credit Party to keep all Inventory in good and marketable condition, free from material defects. Returns and allowances between a Credit Party and its Account Debtors shall follow the Credit Party's customary practices as they exist at the Closing Date. Borrower shall promptly notify Agent of all returns, recoveries, written disputes and written claims that involve more than Two Hundred Fifty Thousand Dollars ($250,000) of Inventory collectively among all Credit Parties.

6.4 Taxes; Pensions. Borrower shall timely file and cause each Credit Party and any Subsidiary of any Credit Party to timely file, all required tax returns and reports (or proper extensions permitted in accordance with applicable law) and timely pay, and cause each Credit Party and any Subsidiary of any Credit Party to timely pay, all foreign, federal, state (other than sales and use taxes), and material local and material state taxes, assessments, deposits and contributions owed (for purposes hereof, "material" shall include taxes, assessments deposits and contributions in excess of $25,000), and shall deliver to Agent, on demand, appropriate certificates attesting to such payments. Borrower shall pay, and cause each Credit Party and any Subsidiary of any Credit Party to pay, all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms. Notwithstanding the foregoing, a Credit Party may defer payment of any contested taxes, *provided*, *however*, that such Credit Party (a) in good faith contests its obligation to pay the taxes by appropriate proceedings promptly and diligently instituted and conducted, (b) notifies Agent in writing of the commencement of, and any material development in, the proceedings, (c) posts bonds or takes any other steps required to prevent the Governmental Authority levying such contested taxes from obtaining a Lien upon any of the Collateral (except for a Permitted Lien) and (d) makes appropriate reserves to its financial statements in conformity with GAAP.

6.5 Insurance. Borrower shall, and shall cause each Credit Party and each Subsidiary of any Credit Party to, keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower's industry and location and as Agent may reasonably request. Insurance policies shall be in a form, with companies, and in amounts that are reasonably satisfactory to Agent and the Required Lenders. All property policies shall have a lender's loss payable endorsement showing Agent as sole lender's loss payee and waive subrogation against Agent, and all liability policies shall show, or have endorsements showing, Agent as an additional insured. No other loss payees may be shown on the policies unless Agent shall otherwise consent in writing (provided, that Agent's consent to additional loss payees resulting from capital lease or equipment finance transactions and/or real estate leases, in each case permitted pursuant to this Agreement, shall not be unreasonably withheld). If required by Agent, all policies (or the loss payable and additional insured endorsements) shall provide that the insurer shall endeavor to give Agent at least thirty (30) days' notice before canceling, amending, or declining to renew its policy (except for ten (10) days' notice for non-payment). At Agent's request, Borrower shall deliver certified copies of all such Credit Party insurance policies and evidence of all premium payments. If any Credit Party fails to obtain insurance as required under this **Section 6.5** or to pay any amount or furnish any required proof of payment to third persons and Agent, Agent may make all or part of such payment or obtain such insurance policies required in this **Section 6.5**, and take any action under the policies Agent deems prudent.

6.6 Collateral Accounts. Borrower shall, and shall cause each Credit Party to, provide Agent five (5) days prior written notice before establishing any Collateral Account at or with any bank or financial institution. In addition, for each Collateral Account that any Credit Party at any time maintains, Borrower shall, and shall cause each Credit Party to, cause the applicable bank or financial institution at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Agent's Lien in such Collateral Account in accordance with the terms hereunder, which Control Agreement may not be terminated without prior written consent of Agent. The provisions of the previous sentence shall not apply to (i) Deposit Accounts exclusively used for payroll, payroll taxes and other employee wage and benefit payments to or for the benefit of a Credit Party's employees and identified to Agent by Borrower as such; *provided*, *however*, that at all times Borrower shall maintain one or more

separate Deposit Accounts to hold any and all amounts to be used for payroll, payroll taxes and other employee wage and benefit payments, and shall not commingle any monies allocated for such purposes with funds in any other Deposit Account, (ii) the Lease Letter of Credit, and (iii) the LC Collateral Account. Borrower shall, and shall cause each Credit Party to, as of the Closing Date, maintain all its Deposit Accounts, primary Securities Accounts and other transaction accounts with Square 1 and its Affiliates, or, in the case of Securities Accounts, with other depository institutions constituting securities intermediaries where Square 1 or its Affiliates are providing investment advisory services with respect to the assets held in such Securities Accounts; *provided*, that, subject to the conditions set forth in, and for so long as permitted pursuant to the terms of paragraph 1 of, the **Post-Closing Obligations Schedule** attached hereto, Borrower shall be permitted to maintain, and shall not be required to obtain a Control Agreement with respect to, the Designated SVB Deposit Account and the Designated SVB Securities Account.

6.7 Notices of Material Agreements, Litigation and Defaults; Cooperation in Litigation. Promptly (and in any event within four (4) Business Days), (a) upon Borrower becoming aware of the existence of any Event of Default or event which, with the giving of notice or passage of time, or both, would constitute an Event of Default or (b) upon the execution and delivery of any Material Agreement and each material amendment, consent, waiver or other modification, and each notice of termination or default or similar notice delivered to or by a Credit Party in connection with any Material Agreement, or (c) upon Borrower becoming aware of any pending or written threat of action, suit, proceeding or investigation by or against Borrower or any Credit Party which involves the reasonable possibility of any judgment or liability of more than Two Hundred Fifty Thousand Dollars ($250,000) or that could be reasonably expected to result in a Material Adverse Change, or which questions the validity of any of the Financing Documents, or the other documents required thereby or any action to be taken pursuant to any of the foregoing, Borrower shall give written notice to Agent and each Lender of such occurrence, and such further information (including copies of such documentation) as Agent or any Lender shall reasonably request. From the date hereof and continuing through the termination of this Agreement, Borrower shall, and shall cause each Credit Party to, make available to Agent and each Lender, without expense to Agent or any Lender, each Credit Party's officers, employees and agents and books, to the extent that Agent or any Lender may deem them reasonably necessary to prosecute or defend any third-party suit or proceeding instituted by or against Agent or any Lender with respect to any Collateral or relating to a Credit Party.

6.8 Creation/Acquisition of Subsidiaries. In the event Borrower or any Subsidiary creates or, to the extent permitted hereunder, acquires any Subsidiary, Borrower and such Subsidiary shall promptly (and in any event within five (5) Business Days of such creation or acquisition) notify Agent of the creation or acquisition of such new Subsidiary and take all such action as may be reasonably required by Agent or the Required Lenders to cause each such Subsidiary to become a co-Borrower hereunder or to guarantee the Obligations of Borrower under the Financing Documents and, in each case, grant a continuing pledge and security interest in and to the assets of such Subsidiary (substantially as described on **Exhibit A** hereto); and Borrower shall grant and pledge to Agent, for the ratable benefit of the Lenders, a perfected security interest in the stock, units or other evidence of ownership of each Subsidiary (the foregoing collectively,

the "**Joinder Requirements**"); *provided*, that Borrower shall not be permitted to make any Investment in such Subsidiary until such time as Borrower has satisfied the Joinder Requirements.

6.9 Use of Proceeds. Borrower shall use the proceeds of the Credit Extensions solely for (a) transaction fees incurred in connection with the Financing Documents, (b) for working capital needs of Borrower and its Subsidiaries, and (c) any other Permitted Purpose specified in the **Credit Facility Schedule** for such Credit Facility. No portion of the proceeds of the Credit Extensions will be used for family, personal, agricultural or household use.

6.10 Hazardous Materials; Remediation.

(a) If any release or disposal of Hazardous Materials shall occur or shall have occurred on any real property or any other assets of any Borrower or any other Credit Party, such Borrower will cause, or direct the applicable Credit Party to cause, the prompt containment and removal of such Hazardous Materials and the remediation of such real property or other assets as is necessary to comply with all Laws and to preserve the value of such real property or other assets. Without limiting the generality of the foregoing, each Borrower shall, and shall cause each other Credit Party to, comply with each Law requiring the performance at any real property by any Borrower or any other Credit Party of activities in response to the release or threatened release of a Hazardous Material.

(b) Borrower will provide Agent within thirty (30) days after written demand therefor with a bond, letter of credit or similar financial assurance evidencing to the reasonable satisfaction of Agent that sufficient funds are

available to pay the cost of removing, treating and disposing of any Hazardous Materials or Hazardous Materials Contamination and discharging any assessment which may be established on any property as a result thereof, such demand to be made, if at all, upon Agent's determination that the failure to remove, treat or dispose of any Hazardous Materials or Hazardous Materials Contamination, or the failure to discharge any such assessment could reasonably be expected to have a Material Adverse Change.

(c) If there is any conflict between this **Section 6.10** and any environmental indemnity agreement which is a Financing Document, the environmental indemnity agreement shall govern and control.

6.11 Power of Attorney. Each of the officers of Agent is hereby irrevocably made, constituted and appointed the true and lawful attorney for each Borrower (without requiring any of them to act as such) with full power of substitution to do the following: (a) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral (in each case, so long as no Default or Event of Default has occurred and is continuing, other than Permitted Liens), or any judgment based thereon, or otherwise take any action to terminate or discharge the same; (b) so long as Agent has provided not less than three (3) Business Days' prior written notice to Borrower to perform the same and Borrower has failed to take such action, (i) execute in the name of any Person comprising Borrower any schedules, assignments, instruments, documents, and statements that Borrower is obligated to give Agent under this Agreement or that Agent or any Lender deems necessary to perfect or better perfect Agent's security interest or Lien in any Collateral, (ii) do such other and further acts and deeds in the name of Borrower that Agent may deem necessary or desirable to enforce, protect or preserve any Collateral or its rights therein, including, but not limited to, to sign Borrower's name on any invoice or bill of lading for any Account or drafts against Account Debtors; and (iii) after the occurrence and during the continuance of an Event of Default, (A) endorse the name of any Borrower upon any and all checks, drafts, money orders, and other instruments for the payment of money that are payable to Borrower; (B) make, settle, and adjust all claims under Borrower's insurance policies; (C) take any action any Credit Party is required to take under this Agreement or any other Financing Document; (D) transfer the Collateral into the name of Agent or a third party as the Code permits; (E) exercise any rights and remedies described in this Agreement or the other Financing Documents; and (F) do such other and further acts and deeds in the name of Borrower that Agent may deem necessary or desirable to enforce its rights with regard to any Collateral.

6.12 Further Assurances. Borrower shall, and shall cause each Credit Party to, promptly execute any further instruments and take further action as Agent reasonably requests to perfect or better perfect or continue Agent's Lien in the Collateral or to effect the purposes of this Agreement or any other Financing Document.

6.13 Post-Closing Obligations. Borrower shall, and shall cause each Credit Party to, complete each of the post-closing obligations and/or deliver to Agent each of the documents, instruments, agreements and information listed on the **Post-Closing Obligations Schedule** attached hereto, on or before the date set forth for each such item thereon (as may be extended by the Agent in writing in its sole discretion), each of which shall be completed or provided in form and substance satisfactory to Agent and Lenders.

6.14 Disclosure Schedule. Borrower shall, together with delivery of each Schedule Update Compliance Certificate, to the extent any information in the **Disclosure Schedule** has become outdated, inaccurate, incomplete or misleading, deliver to Agent a proposed update to the **Disclosure Schedule** correcting all outdated, inaccurate, incomplete or misleading information. With respect to any proposed updates to the **Disclosure Schedule** involving Permitted Liens, Permitted Indebtedness or Permitted Investments, Agent will replace the **Disclosure Schedule** attached hereto with such proposed update only if such updated information is consistent with the definitions of and limitations herein pertaining to Permitted Liens, Permitted Indebtedness or Permitted Investments. With respect to any proposed updates to the **Disclosure Schedule** involving other matters, Agent will replace the applicable portion of the **Disclosure Schedule** attached hereto with such proposed update upon Agent's approval thereof.

6.15 Replacement Warrants. Promptly (and in any event within five (5) Business Days) after Agent's request, Borrower shall deliver the following:

(a) In the event that, on or before November 30, 2014, Borrower authorizes and issues, or obligates itself to issue, shares of any additional class or series of Preferred Stock other than any such class or series that ranks junior to the Series B Preferred Stock of Borrower with respect to the distribution of assets on the liquidation, dissolution or winding up of Borrower or a Deemed Liquidation Event (as defined in the Second Amended and Restated Certificate of Incorporation of Borrower filed with the Secretary of State for the State of Delaware on October 31, 2013), the payment of dividends and

rights of redemption (such additional class or series, the "**Senior Preferred Stock**"), Borrower shall provide Agent and each Lender with written notice of such authorization and issuance or obligation, which notice shall describe in reasonable detail the terms, rights, preferences and priorities of such additional class or series ("**Notice of Issuance of Senior Preferred Stock**"). Within five (5) Business Days after Agent or any Lender delivers written notice to Borrower that Agent or any one or more Lenders elect to exchange their Warrants — Tranche 1 for Replacement Warrants — Tranche 1, Borrower shall issue and deliver to Agent and

the Lenders the Replacement Warrants — Tranche 1, together with evidence reasonably satisfactory to Agent that the Replacement Warrants — Tranche 1 and the related shares have been duly authorized and issued by all necessary corporate and shareholder action of Borrower, and the Warrants — Tranche 1, which Agent and Lenders have elected to exchange hereunder, shall be cancelled and returned to the Borrower.

(b) In the event that (i) Tranche 2 is advanced before November 30, 2014 but prior to the authorization and issuance by the Borrower of (or Borrower obligating itself to issue) Senior Preferred Stock, and (ii) Borrower issues (or obligates itself to issue) Senior Preferred Stock on or before November 30, 2014, Borrower shall provide Agent and each Lender with a Notice of Issuance of Senior Preferred Stock. Within five (5) Business Days after Agent or any Lender delivers written notice to Borrower that Agent or any one or more Lenders elect to exchange their Warrants — Tranche 2 for Replacement Warrants — Tranche 2, Borrower shall issue and deliver to Agent and the Lenders the Replacement Warrants — Tranche 2, together with evidence reasonably satisfactory to Agent that the Replacement Warrants — Tranche 2 and the related shares have been duly authorized and issued by all necessary corporate and shareholder action of Borrower, and the Warrants — Tranche 2, which Agent and Lenders have elected to exchange hereunder, shall be cancelled and returned to the Borrower.

7 NEGATIVE COVENANTS

Borrower shall not do, nor shall it permit any Credit Party to do, any of the following without the prior written consent of Agent:

7.1 Dispositions. Convey, sell, abandon, lease, license, transfer, assign or otherwise dispose of (collectively, "**Transfer**") all or any part of its business or property, except for (a) sales, transfers or dispositions of Inventory in the Ordinary Course of Business; or (b) sales or abandonment of worn-out or obsolete Equipment; (c) to the extent that it would constitute a Transfer, any Permitted Lien; (d) any Permitted License; and (e) an abandonment of Intellectual Property or Material Intangible Property that would be permitted pursuant to clause (C) of the IP Protection Provision (as defined in Section 8.1(d)(i)).

7.2 Changes in Business, Management, Ownership or Business Locations. (a) Engage in any business other than the businesses currently engaged in by Borrower or such Subsidiary, as applicable, or reasonably related thereto; (b) liquidate or dissolve; (c) enter into any transaction or series of related transactions which would result in a Change in Control unless the agreement governing such transaction provides, as a condition precedent to the consummation of such transaction, for either (x) the indefeasible payment in full in cash of all Obligations or (y) the consent of Agent and Lenders; (d) add any new offices or leased business locations, or enter into any new leases with respect to existing offices or business locations (unless such new or existing offices or business locations contain less than One Hundred Thousand Dollars ($100,000) in Borrower's assets or property and do not contain any of Borrower's Books) without first delivering a fully-executed Access Agreement to Agent (provided, that, Borrower shall not be required to obtain an Access Agreement with respect to Collateral consisting of laptops, mobile phones and similar items in the possession of an employee or consultant (provided, that, copies of any Books of any Credit Party stored on such items are also stored in a location subject to an Access Agreement and readily available to such Credit Party and Agent); (e) change its jurisdiction of organization; (f) change its organizational structure or type; (g) change its legal name without the prior written consent of the Agent and the Required Lenders (which consent shall not be unreasonably withheld); (h) change any organizational number (if any) assigned by its jurisdiction of organization; (i) relocate its chief executive office without 30 days prior written notification to Agent; or (j) suffer the resignation of one or more directors from its board of directors in anticipation of the Borrower's insolvency.

7.3 Mergers or Acquisitions. Merge or consolidate with any other Person, or acquire all or substantially all of the capital stock or property of another Person; *provided, however*, that a Subsidiary of Borrower may merge or consolidate into another Subsidiary that is a Borrower or a Guarantor that has granted a security interest in favor of Agent in or upon such Guarantor's Collateral, so long as (a) Borrower has provided Agent with prior written notice of such transaction, (b) a Person already comprising the Borrower shall be the surviving legal entity, (c) Borrower's tangible net worth is not thereby reduced,

(d) no Event of Default has occurred and is continuing prior thereto or arises as a result therefrom, and (e) Borrower shall be in compliance with the covenants set forth in this Agreement both before and after giving effect to such transaction.

7.4 Indebtedness. Create, incur, assume, or be liable for any Indebtedness other than Permitted Indebtedness.

7.5 Encumbrance. (a) Create, incur, allow, or suffer any Lien on any of its property, except for Permitted Liens, (b) permit any Collateral to fail to be subject to the first priority security interest granted herein except for Permitted Liens that may have priority by operation of applicable Law or by the terms of a written intercreditor or subordination agreement entered into by Agent, or (c) enter into any agreement, document, instrument or other arrangement (except with or in favor of Agent) with any Person which directly or indirectly prohibits or has the effect of prohibiting Borrower or any Subsidiary from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower's or any Subsidiary's Collateral or Intellectual Property, except for negative pledges in connection with capital lease or equipment financing transactions permitted pursuant to the definition of "Permitted Liens" herein (so long as such negative pledges are limited to the specific equipment being leased or financed and permit Agent's and any Lender's Liens hereunder or under any Loan Documents) and except for customary restrictions on assignment without consent in license agreements to the extent such restrictions are rendered unenforceable pursuant to the Code.

7.6 Maintenance of Collateral Accounts. Maintain any Collateral Account, except pursuant to the terms of **Section 6.6** hereof.

7.7 Distributions; Investments; Margin Stock. (a) Pay any dividends (other than dividends payable solely in common stock) or make any distribution or payment with respect to or redeem, retire or purchase or repurchase any of its equity interests (other than repurchases pursuant to the terms of employee stock purchase plans, employee restricted stock agreements or similar plans in an aggregate amount not to exceed $250,000 in any fiscal year, as long as an Event of Default does not exist prior to such repurchase or would not exist after giving effect to such repurchase), or (b) directly or indirectly make any Investment (including, without limitation, any additional Investment in any Subsidiary) other than Permitted Investments. Without limiting the foregoing, Borrower shall not, and shall not permit any of its Subsidiaries to, purchase or carry Margin Stock.

7.8 Transactions with Affiliates. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of any Credit Party, except for (a) transactions that are in the Ordinary Course of Business, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm's length transaction with a non-affiliated Person, (b) transactions with Subsidiaries that are designated as a Borrower hereunder and that are not otherwise prohibited by **Article 7** of this Agreement, (c) transactions permitted by **Sections 7.7 or 7.9** of this Agreement and (d) Bona Fide Preferred Equity Transactions.

7.9 Subordinated Debt. (a) Make or permit any payment on any Subordinated Debt, except to the extent expressly permitted to be made pursuant to the terms of the Subordination Agreement to which such Subordinated Debt is subject, or (b) amend any provision in any document relating to the Subordinated Debt other than as may be expressly permitted pursuant to the terms of any applicable Subordination Agreement to which such Subordinated Debt is subject.

7.10 Compliance. Become an "investment company" or a company controlled by an "investment company", under the Investment Company Act of 1940, as amended or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Credit Extension for that purpose; fail to meet the minimum funding requirements of ERISA, permit a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; fail to comply with the Federal Fair Labor Standards Act or violate any other Law or regulation, if the violation could reasonably be expected to have a Material Adverse Change; withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any present pension, profit sharing and deferred compensation plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other Governmental Authority.

7.11 Amendments to Organization Documents and Material Agreements. Amend, modify or waive any provision of (a) any Material Agreement in a manner that is materially adverse to Borrower, materially adverse to the rights of Agent or any Lender, that pertains to rights to assign or grant a security interest in such Material Agreement, or in a manner that could reasonably be expected to result in a Material Adverse Change, or (b) any of its organizational documents

(other than (i) a change in registered agents, (ii) changes made solely in connection with a Bona Fide Preferred Equity Transaction, or (iii) a change that could not reasonably be expected to materially and adversely affect the rights of Agent or Lenders hereunder, but, for the avoidance of doubt, under no circumstances a change of its name (except to the extent that Agent and the Required Lenders have provided their consent in accordance with **Section 7.2(g)**), type of organization or jurisdiction of organization), in each case, without the prior written consent of Agent. Borrower shall provide to Agent copies of all amendments, waivers and modifications of any Material Agreement or organizational documents.

7.12 Compliance with Anti-Terrorism Laws**.** Directly or indirectly, knowingly enter into any documents, instruments, agreements or contracts with any Person listed on the OFAC Lists. Borrower shall immediately notify Agent if Borrower has knowledge that Borrower or any Subsidiary or Affiliate is listed on the OFAC Lists or (a) is convicted on, (b) pleads *nolo contendere* to, (c) is indicted on, or (d) is arraigned and held over on charges involving money laundering or predicate crimes to money laundering. Borrower will not, nor will Borrower permit any Subsidiary or Affiliate to, directly or indirectly, (i) conduct any business or engage in any transaction or dealing with any Blocked Person, including, without limitation, the making or receiving of any contribution of funds, goods or services to or for the benefit of any Blocked Person, (ii) deal in, or otherwise engage in any transaction relating to, any property or interests in property blocked pursuant to Executive Order No. 13224, any similar executive order or other Anti-Terrorism Law, or (iii) engage in or conspire to engage in any transaction that evades or avoids, or has the purpose of evading or avoiding, or attempts to violate, any of the prohibitions set forth in Executive Order No. 13224 or other Anti-Terrorism Law. Agent hereby notifies Borrower that pursuant to the requirements of Anti-Terrorism Laws, and Agent's policies and practices, Agent is required to obtain, verify and record certain information and documentation that identifies Borrower and its principals, which information includes the name and address of Borrower and its principals and such other information that will allow Agent to identify such party in accordance with Anti-Terrorism Laws.

8 LIFE SCIENCES PROVISIONS ; SBIC RELATED PROVISIONS

8.1 Life Sciences Covenants.

(a) As used in this Agreement, the following terms have the following meanings:

"**DEA**" means the Drug Enforcement Administration of the United States of America, and any successor agency thereof.

"**Drug Application**" means a new drug application, an abbreviated drug application, or a product license application for any Product, as appropriate, as those terms are defined in the FDCA.

"**FDA**" means the Food and Drug Administration of the United States of America, or any successor entity thereto.

"**FDCA**" means the Federal Food, Drug and Cosmetic Act, as amended, 21 U.S.C. Section 301 et seq., and all regulations promulgated thereunder.

"**Material Intangible Property**" means all of Borrower's Intellectual Property and license or sublicense agreements or other agreements with respect to rights in Intellectual Property that are material to the condition (financial or other), business or operations of Borrower.

"**Permitted License**" means (a) any non-exclusive license of patent rights of Borrower or its Subsidiaries granted to third parties in the Ordinary Course of Business, (b) any exclusive license of patent rights of Borrower or its Subsidiaries exclusive solely as to discrete geographical areas outside of the United States and (c) an exclusive license of patent rights of Borrower or its Subsidiaries solely in connection with a research and collaboration agreement with respect to the CAT-2054 Product so long as (1) Borrower has at least two (2) other Products (for which Borrower has retained all United States Product rights) in clinical development and (2) Borrower shall have provided Agent and Lenders with fifteen (15) Business Days prior written notice of such transaction, accompanied by a reasonable description of the same and final or substantially final documentation with respect thereto, and in each of (a), (b) and (c) is an arm's length transaction for fair value consideration and does not result in a legal transfer of title of the licensed property.

"**Products**" means any products manufactured, sold, developed, tested or marketed by any Borrower or any of its Subsidiaries, including without limitation, those products set forth on the **Products Schedule** (as updated from time to time in accordance with **Section 8.1(d)**); *provided*, *however*, that if Borrower shall fail to comply with the obligations under **Section 8.1(d)** to give notice to Agent and update the **Products Schedule** prior to manufacturing, selling, developing, testing or marketing any new Product, any such improperly undisclosed Product shall be deemed to be included in this definition.

"**Registered Intellectual Property**" means any patent, registered trademark or servicemark, registered copyright, registered mask work, or any pending application for any of the foregoing.

(b) [Reserved].

(c) Borrower represents and warrants as follows at all times unless expressly provided below:

(i) Intellectual Property and License Agreements. A list of all of Intellectual Property of each Credit Party and all license agreements, sublicenses, or other rights of any Credit Party to use Intellectual Property (including all in-bound license agreements and Permitted Licenses, but excluding over-the-counter software that is commercially available to the public), as of the Closing Date and, as updated pursuant to **Section 8.1(d)**, is set forth on the **Intangible Property Schedule**, which indicates, for each item of property: (A) the name of the Credit Party owning such Intellectual Property or licensee to such license agreement; (B) the Credit Party's identifier for such property (i.e., name of patent, license, etc.), (C) whether such property is Intellectual Property (or application therefor) owned by a Credit Party or is property to which a Credit Party has rights pursuant to a license agreement, and (D) the expiration date of such Intellectual Property or license agreement. In the case of any Material Intangible Property that is a license agreement, the **Intangible Property Schedule** further indicates, for each: (1) the name and address of the licensor, (2) the name and date of the agreement pursuant to which such item of Material Intangible Property is licensed, (3) whether or not such license agreement grants an exclusive license to a Credit Party, and (4) whether there are any purported restrictions in such license agreement as to the ability of a Credit Party to grant a security interest in and/or to transfer any of its rights as a licensee under such license agreement. Except for Permitted Licenses noted on the **Intangible Property Schedule**, each Credit Party is the sole owner of its Intellectual Property, free and clear of any Liens. Each Patent is valid and enforceable and no part of the Material Intangible Property has been judged invalid or unenforceable, in whole or in part, and to the best of Borrower's knowledge, no claim has been made that any part of the Intellectual Property violates the rights of any third party.

(ii) Regulatory Status.

(A) All Products and all Required Permits are listed on the **Products Schedule** and **Required Permits Schedule** (as updated from time to time pursuant to **Section 8.1(d)**), and Borrower has delivered to Agent a copy of all Required Permits requested by Agent as of the date hereof or to the extent requested by Agent pursuant to **Section 8.1(d)**.

(B) With respect to any Product being tested or manufactured, Borrower and its Subsidiaries have received, and such Product is the subject of, all Required Permits needed in connection with the testing or manufacture of such Product as such testing or manufacturing is currently being conducted by or on behalf of Borrower, and Borrower and its Subsidiaries have not received any notice from any applicable Governmental Authority, specifically including the FDA, that such Governmental Authority is conducting an investigation or review of (1) Borrower's or such Subsidiary's manufacturing facilities and processes for such Product which have disclosed any material deficiencies or material violations of Laws and/or the Required Permits related to the manufacture of such Product, or (2) any such Required Permit or that any such Required Permit has been revoked or withdrawn, nor has any such Governmental Authority issued any order or recommendation stating that the development, testing and/or manufacturing of such Product should cease and, in the case of this clause (2), such review, revocation, withdrawal, order or recommendation would reasonably be expected to result in a Material Adverse Change.

(C) With respect to any Product marketed or sold by Borrower or its Subsidiaries, Borrower and its Subsidiaries have received, and such Product is the subject of, all Required Permits needed in connection with the marketing and sales of such Product as currently being marketed or sold by Borrower or its Subsidiaries. Borrower and its Subsidiaries have not received any notice from any applicable Governmental Authority, specifically including the FDA, (i) that such Governmental Authority is conducting an investigation or review of any such Required Permit which have

disclosed any material deficiencies or material violations of Laws and/or the Required Permits related to the marketing or sale of of such Product or (ii) that any such Required Permit has been revoked or withdrawn, and such revocation or withdrawal would reasonably be expected to result in a Material Adverse Change. No Governmental Authority has issued any order or recommendation stating that such marketing or sales of such Product cease or that such Product be withdrawn from the marketplace.

(D) (i) there have been no adverse clinical test results which have or could reasonably be expected to result in a Material Adverse Change, and (ii) there have been no Product recalls or voluntary Product withdrawals from any market (other than specific and discrete batches or lots not made in conjunction with a larger recall).

(E) Borrower and its Subsidiaries have not experienced any significant failures in its manufacturing of any Product such that the amount of such Product successfully manufactured by Borrower or its Subsidiaries in accordance with all specifications thereof and the required payments related thereto in any month shall decrease significantly with respect to the quantities of such Product produced in the prior month, in each case which have or could reasonably be expected to result in a Material Adverse Change.

(d) Borrower covenants and agrees as follows:

(i) Borrower shall own, or be licensed to use or otherwise have the right to use, all Material Intangible Property. All Material Intangible Property of Borrower is and shall be fully protected and/or duly and properly registered, filed or issued in the appropriate office and jurisdictions for such registrations, filings or issuances, except where the failure to do so would not reasonably be expected to result in a Material Adverse Change. Borrower shall not become a party to, nor become bound by, any material license or other material agreement with respect to which Borrower is the licensee that prohibits or otherwise restricts Borrower from granting a security interest in Borrower's interest in such license or agreement or other property. Borrower shall at all times conduct its business without infringement of any Intellectual Property rights of others. To the extent Borrower determines, in the exercise of its reasonable business judgment, that it is prudent to do so, Borrower shall: (A) protect, defend and maintain the validity and enforceability of its Material Intangible Property; (B) promptly advise Agent in writing of material infringements of its Material Intangible Property; and (C) not allow any of Borrower's Intellectual Property to be abandoned, invalidated, forfeited or dedicated to the public or to become unenforceable (provided, that, any abandonment, invalidation, forfeiture, dedication to the public or rendering as unenforceable of Material Intangible Property shall not be permitted without the Agent's prior written consent) (this sentence being referred to as the "IP Protection Provision"). If Borrower (1) obtains any patent, registered trademark or servicemark, registered copyright, registered mask work, or any pending application for any of the foregoing, whether as owner, licensee or otherwise, or (2) applies for any patent or the registration of any trademark or servicemark, then Borrower shall, together with the delivery of the each Schedule Update Compliance Certificate, provide an updated Intangible Property Schedule to Agent and Lenders in accordance with **Section 8.1(d)(iii)** and shall execute such documents and take such other actions as Agent shall reasonably request in its good faith business judgment to perfect and maintain a first priority perfected security interest in favor of Agent, for the ratable benefit of Lenders, in the IP Proceeds (as defined in **Exhibit A**) pertaining thereto. Upon request of Agent, Borrower shall provide to Agent, copies (with redactions for confidential information related to patent processes and other similar information; provided, that, upon request, Agent shall be permitted to view such redacted information at Borrower's offices) of any or all applications that it files for patents or for the registration of trademarks, servicemarks, copyrights or mask works.

(ii) In connection with the development, testing, manufacture, marketing or sale of each and any Product by a Credit Party, such Credit Party shall comply fully and completely in all respects with all Required Permits at all times issued by any Governmental Authority the noncompliance with which could reasonably be expected to have a Material Adverse Change, specifically including the FDA, with respect to such development, testing, manufacture, marketing or sales of such Product by such Credit Party as such activities are at any such time being conducted by such Credit Party.

(iii) Borrower shall provide to Agent, together with delivery of each Schedule Update Compliance Certificate, an updated **Intangible Property Schedule** reflecting (A) acquisition and/or development of any new Registered Intellectual Property, (B) entering or becoming bound by any additional license or sublicense agreement or other agreement with respect to rights in Intellectual Property (other than over-the-counter software that is commercially available to the public), and (C) any other material change in Borrower's Material Intangible Property from that listed on the **Intangible Property Schedule**. Borrower shall use commercially reasonable efforts at Agent's request to obtain the consent

of, or waiver by, any person whose consent or waiver is necessary for (x) all licenses or agreements to be deemed "Collateral" and for Agent to have a security interest in it that might otherwise be restricted or prohibited by Law or by the terms of any such license or agreement, whether now existing or entered into in the future, and (y) Agent to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Agent's rights and remedies under this Agreement and the other Financing Documents.

(iv) If, after the Closing Date, Borrower determines to manufacture, sell, develop, test or market any new Product, Borrower shall give prompt (and in any event within 15 days of such determination) written notice to Agent of such determination (which shall include a brief description of such Product, plus a list of all Required Permits relating to such new Product (and a copy of such Required Permits if requested by Agent) and/or Borrower's manufacture, sale, development, testing or marketing thereof issued or outstanding as of the date of such notice) and, then, together with the next Schedule Update Compliance Certificate deliver an updated **Intangible Property Schedule, Products Schedule** and **Required Permits Schedule** reflecting all appropriate changes to such schedules. If Borrower shall at any time obtain any new or additional Required Permits from the FDA, DEA, or parallel state or local authorities, or foreign counterparts of the FDA, DEA, or parallel state or local authorities, with respect to any Product which has previously been disclosed to Agent, Borrower shall, together with the next Schedule Update Compliance Certificate, deliver an updated **Required Permits Schedule** reflecting such new or additional Required Permits, or any other change in such **Required Permits Schedule**. Upon request, Borrower shall provide Agent with copies of any of its Required Permits.

(e) In addition to the events listed in Article 10, any one of the following shall also constitute an Event of Default under this Agreement: (i) the institution of any proceeding by FDA or similar Governmental Authority to order the withdrawal of any Product or Product category from the market or to enjoin Borrower, its Subsidiaries or any representative of Borrower or its Subsidiaries from manufacturing, marketing, selling or distributing any Product or Product category, (ii) the institution of any action or proceeding by any DEA, FDA, or any other Governmental Authority to revoke, suspend, reject, withdraw, limit, or restrict any Required Permit held by Borrower, its Subsidiaries or any representative of Borrower or its Subsidiaries, which, in each case, could reasonably be expected to result in Material Adverse Change, (iii) the commencement of any enforcement action against Borrower, its Subsidiaries or any representative of Borrower or its Subsidiaries (with respect to the business of Borrower or its Subsidiaries) by DEA, FDA, or any other Governmental Authority, (iv) the recall of any Products from the market, the voluntary withdrawal of any Products from the market, or actions to discontinue the sale of any Products, or (v) the occurrence of adverse test results in connection with a Product, which could reasonably be expected to result in Material Adverse Change.

8.2 SBIC Related Provisions.

(a) SBIC Acknowledgement. Borrower acknowledges that Agent, and any Lender with the word "SBIC" in its name, is a Federal licensee under the Small Business Investment Act of 1958, as amended ("**SBA Act**"). The term "SBA" as used herein means the U.S. Small Business Administration.

(b) As a condition to any Credit Extension, Borrower shall, upon request of Agent or any Lender, complete and deliver to Agent and such Lender SBA Forms 480, 652 and 1031, the SBA Economic Impact Assessment. Any information provided by the Borrower to Agent or any Lender on each such form is and will be true, accurate and complete in all material respects.

(c) Within forty-five (45) days after the end of each fiscal year of Borrower, and at such other times as Agent or any Lender may reasonably request to the extent related to SBA regulations, Borrower shall provide to Agent and such Lender such forms and financial and other information with respect to any business or financial condition of Borrower or any of its Subsidiaries required by the SBA, including, but not limited to (i) forms and information with respect to Agent's or any Lender's reporting requirements under SBA Form 468, (ii) information regarding the full-time equivalent jobs created or retained in connection with any Lender's investment in Borrower, the impact of the financing on Borrower's business in terms of revenues and profits and on taxes paid by Borrower and its employees, and (iii) a list of holders of the Obligations. Agent and/or Lenders shall provide Borrower with or provide reasonable assistance to Borrower in obtaining any applicable forms that may be required to be delivered by the Borrower in accordance with this **Section 8.2(c)**.

(d) Upon request of Agent or any Lender, the Borrower shall promptly (and in any event within twenty (20) days of such request) furnish to Agent and such Lender all information as Agent or any Lender may reasonably request, to the extent reasonably available to the Borrower, in order for Agent or any Lender to comply with the requirements

of 13 C.F.R. Section 107.620 or to prepare or file SBA Form 468 and any other information requested or required by the SBA or any other similar Governmental Authority asserting jurisdiction over Agent or such Lender. Each Borrower shall afford to Agent and such Lender and examiners of the SBA reasonable access, during normal business hours and with prior reasonable notice, to the books, records and properties of such Borrower for the purpose of verifying the certifications made in accordance with 13 C.F.R. Section 107.610 and for all other purposes required by the SBA.

(e) No Borrower presently engages in, and it will not hereafter engage in, any activities, and no Borrower will use directly or indirectly, the proceeds from the Credit Extensions made on the Closing Date or otherwise pursuant to the Financing Documents, for any purpose for which a small business investment company is prohibited from using funds by the SBA Act and the regulations thereunder, including 13 C.F.R. Section 107.720. For a period of twelve (12) months following the Closing Date, no Borrower shall knowingly cause the nature of its business activity to change if such change would render such Borrower ineligible for financing pursuant to 13 C.F.R. Section 107.720. So long as any Obligations are owing to Agent or any Lender under the Financing Documents, the Borrower will at all times comply with all non-discrimination requirements applicable to the Borrower under federal law.

9 RESERVED

10 EVENTS OF DEFAULT

10.1 Events of Default. The occurrence of any of the following conditions and/or events, whether voluntary or involuntary, by operation of law or otherwise, shall constitute an "**Event of Default**" and Credit Parties shall thereupon be in default under this Agreement and each of the other Financing Documents:

(a) Borrower fails to (i) make any payment of principal or interest on any Credit Extension on its due date, or (ii) pay any other Obligations within three (3) Business Days after such Obligations are due and payable (which three (3) Business Day grace period shall not apply to payments due on the Maturity Date or the date of acceleration pursuant to **Section 10.2** hereof);

(b) Any Credit Party defaults in the performance of or compliance with any term contained in this Agreement or in any other Financing Document (other than occurrences described in other provisions of this **Section 10.1** for which a different grace or cure period is specified or for which no grace or cure period is specified and thereby constitute immediate Events of Default) and such default is not remedied by the Credit Party or waived by Agent within ten (10) days after the earlier of (i) the date of receipt by any Borrower of notice from Agent or Required Lenders of such default, or (ii) the date an officer of such Credit Party becomes aware, or through the exercise of reasonable diligence should have become aware, of such default;

(c) Any Credit Party defaults in the performance of or compliance with any term contained in **Section 6.2**, **6.4**, **6.5**, **6.6**, **6.8**, **6.10** or **6.15** or **Article 7** or **Article 8**;

(d) Any representation, warranty, certification or statement made by any Credit Party, or any other Person acting for or on behalf of a Credit Party (i) in any Financing Document or in any certificate, financial statement or other document delivered pursuant to any Financing Document or (ii) to induce Agent and/or Lenders to enter into this Agreement or any Financing Document is incorrect in any respect (or in any material respect if such representation, warranty, certification or statement is not by its terms already qualified as to materiality) when made (or deemed made);

(e) (i) any Credit Party defaults under or breaches any Material Agreement (after any applicable grace period contained therein), or a Material Agreement shall be terminated by a third party or parties party thereto prior to the expiration thereof, or there is a loss of a material right of a Credit Party under any Material Agreement to which it is a party, in each case which could reasonably be expected to result in a Material Adverse Change, (ii) (A) any Credit Party fails to make (after any applicable grace period) any payment when due (whether due because of scheduled maturity, required prepayment provisions, acceleration, demand or otherwise) on any Indebtedness (other than the Obligations) of such Credit Party or such Subsidiary having an aggregate principal amount (including undrawn committed or available amounts and including amounts owing to all creditors under any combined or syndicated credit arrangement) of more than Two Hundred Fifty Thousand Dollars ($250,000) ("**Material Indebtedness**"), (B) any other event shall occur or condition shall exist (after the expiration of all applicable grace periods) under any contractual obligation relating to any such Material Indebtedness, if

the effect of such event or condition is to accelerate, or to permit the acceleration of (without regard to any subordination terms with respect thereto), the maturity of such Material Indebtedness or (C) any such Material Indebtedness shall become or be declared to be due and payable, or be required to be prepaid, redeemed, defeased or repurchased (other than by a regularly scheduled required prepayment), prior to the stated maturity thereof, (iii) any Credit Party defaults (beyond any applicable grace period) under any obligation for payments due under, or any other obligation which permits a landlord to terminate, any real estate lease agreement for its principal place of business and any other location where its Books are located (but not such other location to the extent such Books are also available at its principal place of business), (iv) the occurrence of any breach or default under any terms or provisions of any Subordinated Debt Document or under any agreement subordinating the Subordinated Debt to all or any portion of the Obligations, or the occurrence of any event requiring the prepayment of any Subordinated Debt (except as expressly permitted pursuant to, and in accordance with, the terms set forth in the applicable subordination agreement), or the delivery of any notice with respect to any Subordinated Debt or pursuant to any Subordination Agreement that triggers the start of any standstill or similar period under any Subordination Agreement, or (v) any Borrower makes any payment on account of any Indebtedness that has been subordinated to any of the Obligations, other than payments specifically permitted by the terms of such subordination;

(f) (i) any Credit Party shall generally not pay its debts as such debts become due, shall admit in writing its inability to pay its debts generally, shall become insolvent, shall make a general assignment for the benefit of creditors, or shall cease doing business as a going concern, (ii) any proceeding shall be instituted by or against any Credit Party seeking to adjudicate it a bankrupt or insolvent or seeking liquidation, winding up, reorganization, arrangement, adjustment, protection, relief, composition of it or its debts or any similar order, in each case under any law relating to bankruptcy, insolvency or reorganization or relief of debtors or seeking the entry of an order for relief or the appointment of a custodian, receiver, trustee, conservator, liquidating agent, liquidator, other similar official or other official with similar powers, in each case for it or for any substantial part of its property and, in the case of any such proceedings instituted against (but not by or with the consent of) such Credit Party, either such proceedings shall remain undismissed or unstayed for a period of forty-five (45) days or more or any action sought in such proceedings shall occur or (iii) any Credit Party shall take any corporate or similar action or any other action to authorize any action described in **clause (i)** or **(ii)** above;

(g) (i) The service of process seeking to attach, execute or levy upon, seize or confiscate any Collateral Account, any Intellectual Property, or any funds of any Credit Party on deposit with Agent, any Lender or any Affiliate of Agent or any Lender, or (ii) a notice of lien, levy, or assessment is filed against any assets of a Credit Party by any government agency, and the same under subclauses (i) and (ii) hereof are not discharged or stayed (whether through the posting of a bond or otherwise) prior to the earlier to occur of ten (10) days after the occurrence thereof or such action becoming effective;

(h) (i) any court order enjoins, restrains, or prevents Borrower from conducting any material part of its business, (ii) the institution by any Governmental Authority of criminal proceedings against any Credit Party, or (iii) one or more judgments or orders for the payment of money (not paid or fully covered by insurance) aggregating in excess of $250,000 shall be rendered against any or all Credit Parties and either (A) enforcement proceedings shall have been commenced by any creditor upon any such judgments or orders, or (B) there shall be any period of ten (10) consecutive days during which a stay of enforcement of any such judgments or orders, by reason of a pending appeal, bond or otherwise, shall not be in effect;

(i) any Lien created by any of the Financing Documents shall at any time fail to constitute a valid and perfected Lien on all of the Collateral purported to be encumbered thereby, subject to no prior or equal Lien except Permitted Liens, or any Credit Party shall so assert; any provision of any Financing Document shall fail to be valid and binding on, or enforceable against, a Credit Party, or any Credit Party shall so assert;

(j) A Change in Control occurs or any Credit Party or direct or indirect equity owner in a Credit Party, with the power and authority to bind such Credit Party or to consummate such Change in Control, shall enter into agreement which contemplates a Change in Control unless such agreement provides, as a condition precedent to the consummation of such agreement, for either (x) the indefeasible payment in full in cash of all Obligations or (y) the consent of Agent and Lenders;

(k) Any Required Permit shall have been (i) revoked, rescinded, suspended, modified in an adverse manner or not renewed in the Ordinary Course of Business for a full term, or (ii) subject to any decision by a Governmental Authority that designates a hearing with respect to any applications for renewal of any of such Required Permit or that could

result in the Governmental Authority taking any of the actions described in clause (i) above, and such decision or such revocation, rescission, suspension, modification or non-renewal (A) has, or would reasonably be expected to have, a Material Adverse Change, or (B) adversely affects the legal qualifications of any Credit Party to hold such Required Permit in any applicable jurisdiction and such revocation, rescission, suspension, modification or non-renewal would reasonably be expected to result in a Material Adverse Change;

(l) If any Borrower is or becomes an entity whose equity is registered with the SEC, and/or is publicly traded on and/or listed by a public securities exchange, such Borrower's equity fails to remain registered with the SEC, and/or such equity fails to remain publicly traded on and listed by a public securities exchange; or

(m) The occurrence of any fact, event or circumstance that could reasonably be expected to result in a Material Adverse Change.

All cure periods provided for in this **Section 10.1** shall run concurrently with any cure period provided for in any applicable Financing Documents under which the default occurred.

10.2 Rights and Remedies.

(a) Upon the occurrence and during the continuance of an Event of Default, Agent may, and at the written direction of the Required Lenders shall, without notice or demand, do any or all of the following: (i) deliver notice of the Event of Default to Borrower, (ii) by notice to any Borrower declare all Obligations immediately due and payable (but if an Event of Default described in **Section 10.1(f)** occurs all Obligations shall be immediately due and payable without any action by Agent or the Lenders), or (iii) by notice to any Borrower suspend or terminate the obligations, if any, of the Lenders to advance money or extend credit for Borrower's benefit under this Agreement or under any other agreement between any Credit Party and Agent and/or the Lenders (but if an Event of Default described in **Section 10.1(f)** occurs all obligations, if any, of the Lenders to advance money or extend credit for Borrower's benefit under this Agreement or under any other agreement between Borrower and Agent and/or the Lenders shall be immediately terminated without any action by Agent or the Lenders).

(b) Without limiting the rights of Agent and Lenders set forth in **Section 10.2(a)** above, upon the occurrence and during the continuance of an Event of Default, Agent may, and at the written direction of the Required Lenders shall, without notice or demand, do any or all of the following:

(i) with or without legal process, enter any premises where the Collateral may be and take possession of and remove the Collateral from the premises or store it on the premises, and foreclose upon and/or sell, lease or liquidate, the Collateral, in whole or in part;

(ii) apply to the Obligations (A) any balances and deposits of any Credit Party that Agent or any Lender or any Affiliate of Agent or a Lender holds or controls, or (B) any amount held or controlled by Agent or any Lender or any Affiliate of Agent or a Lender owing to or for the credit or the account of any Credit Party;

(iii) settle, compromise or adjust and grant releases with respect to disputes and claims directly with Account Debtors for amounts on terms and in any order that Agent considers advisable, notify any Person owing any Credit Party money of Agent's security interest in such funds, and verify the amount of such Account;

(iv) make any payments and do any acts it considers necessary or reasonable to protect the Collateral and/or its security interest in the Collateral. Borrower shall assemble the Collateral if Agent requests and make it available as Agent designates. Agent may also render any or all of the Collateral unusable at a Credit Party's premises and may dispose of such Collateral on such premises without liability for rent or costs. Borrower grants Agent a license to enter and occupy any of its premises, without charge, to exercise any of Agent's rights or remedies;

(v) pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred;

(vi) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, and/or advertise for

sale, the Collateral. Agent is hereby granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower's labels, patents, copyrights, mask works, rights of use of any name, trade secrets, trade names, trademarks, service marks, and advertising matter, or any similar property as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral (and including in such license access to all media in which any of the licensed items may be recorded or stored and to all computer software and programs used for the compilation or printout thereof) and, in connection with Agent's exercise of its rights under this **Article 10**, Borrower's rights under all licenses and all franchise agreements shall be deemed to inure to Agent for the benefit of the Lenders;

(vii) place a "hold" on any account maintained with Agent or the Lenders or any Affiliate of Agent or a Lender and/or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Control Agreement or similar agreements providing control of any Collateral;

(viii) demand and receive possession of the Books of Borrower and the other Credit Parties; and

(ix) exercise all other rights and remedies available to Agent under the Financing Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

10.3 Notices. Any notice that Agent is required to give to a Credit Party under the UCC of the time and place of any public sale or the time after which any private sale or other intended disposition of the Collateral is to be made shall be deemed to constitute reasonable notice if such notice is given in accordance with this Agreement at least ten (10) days prior to such action.

10.4 Protective Payments. If any Credit Party fails to pay or perform any covenant or obligation under this Agreement or any other Financing Document, Agent may pay or perform such covenant or obligation, and all amounts so paid by Agent are Protective Advances and immediately due and payable, bearing interest at the then highest applicable rate for the Credit Facilities hereunder, and secured by the Collateral. No such payments or performance by Agent shall be construed as an agreement to make similar payments or performance in the future or constitute Agent's waiver of any Event of Default.

10.5 Liability for Collateral No Waiver; Remedies Cumulative. So long as Agent and the Lenders comply with reasonable banking practices regarding the safekeeping of the Collateral in the possession or under the control of Agent and the Lenders, Agent and the Lenders shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other Person. Borrower bears all risk of loss, damage or destruction of the Collateral. Agent's failure, at any time or times, to require strict performance by Borrower of any provision of this Agreement or any other Financing Document shall not waive, affect, or diminish any right of Agent thereafter to demand strict performance and compliance herewith or therewith. No waiver hereunder shall be effective unless signed by Agent and then is only effective for the specific instance and purpose for which it is given. Agent's rights and remedies under this Agreement and the other Financing Documents are cumulative. Agent has all rights and remedies provided under the Code, by Law, or in equity. Agent's exercise of one right or remedy is not an election, and Agent's waiver of any Event of Default is not a continuing waiver. Agent's delay in exercising any remedy is not a waiver, election, or acquiescence.

10.6 Application of Payments and Proceeds. Notwithstanding anything to the contrary contained in this Agreement, upon the occurrence and during the continuance of an Event of Default, (i) Borrower, for itself and the other Credit Parties, irrevocably waives the right to direct the application of any and all payments at any time or times thereafter received by Agent from or on behalf of Borrower of all or any part of the Obligations, and, as between Borrower and the Credit Parties on the one hand and Agent and Lenders on the other, Agent shall have the continuing and exclusive right to apply and to reapply any and all payments received against the Obligations in such manner as Agent may deem advisable notwithstanding any previous application by Agent, and (ii) unless the Agent and the Lenders shall agree otherwise, the proceeds of any sale of, or other realization upon all or any part of the Collateral shall be applied: *first*, to the Protective Advances; *second*, to accrued and unpaid interest on the Obligations (including any interest which, but for the provisions of the United States Bankruptcy Code, would have accrued on such amounts); *third*, to the principal amount of the Obligations outstanding; and *fourth*, to any other indebtedness or obligations of the Credit Parties owing to Agent or any Lender under the Financing Documents. Borrower shall remain fully liable for any deficiency. Any balance remaining shall be delivered

to Borrower or to whoever may be lawfully entitled to receive such balance or as a court of competent jurisdiction may direct. Unless the Agent and the Lenders shall agree otherwise, in carrying out the foregoing, (x) amounts received shall be applied in the numerical order provided until exhausted prior to the application to the next succeeding category, and (y) each of the Persons entitled to receive a payment in any particular category shall receive an amount equal to its pro rata share of amounts available to be applied pursuant thereto for such category.

10.7 Waivers.

(a) Except as otherwise provided for in this Agreement and to the fullest extent permitted by applicable law, each Borrower waives: (i) presentment, demand and protest, and notice of presentment, dishonor, intent to accelerate, acceleration, protest, default, nonpayment, maturity, release, compromise, settlement, extension or renewal of any or all Financing Documents and hereby ratifies and confirms whatever Agent or Lenders may do in this regard; (ii) all rights to notice and a hearing prior to Agent's or any Lender's entry upon the premises of a Borrower, the taking possession or control of, or to Agent's or any Lender's replevy, attachment or levy upon, any Collateral or any bond or security which might be required by any court prior to allowing Agent or any Lender to exercise any of its remedies; and (iii) the benefit of all valuation, appraisal and exemption Laws. Each Borrower acknowledges that it has been advised by counsel of its choices and decisions with respect to this Agreement, the other Financing Documents and the transactions evidenced hereby and thereby.

(b) Each Borrower for itself and all its successors and assigns, (i) agrees that its liability shall not be in any manner affected by any indulgence, extension of time, renewal, waiver, or modification granted or consented to by Agent or any Lender; (ii) consents to any indulgences and all extensions of time, renewals, waivers, or modifications that may be granted by Agent or any Lender with respect to the payment or other provisions of the Financing Documents, and to any substitution, exchange or release of the Collateral, or any part thereof, with or without substitution, and agrees to the addition or release of any Borrower, endorsers, guarantors, or sureties, or whether primarily or secondarily liable, without notice to any other Borrower and without affecting its liability hereunder; (iii) agrees that its liability shall be unconditional and without regard to the liability of any other Borrower, Agent or any Lender for any tax on the indebtedness; and (iv) to the fullest extent permitted by law, expressly waives the benefit of any statute or rule of law or equity now provided, or which may hereafter be provided, which would produce a result contrary to or in conflict with the foregoing.

(c) To the extent that Agent or any Lender may have acquiesced in any noncompliance with any requirements or conditions precedent to the closing of the Credit Facilities or to any subsequent disbursement of Credit Extensions, such acquiescence shall not be deemed to constitute a waiver by Agent or any Lender of such requirements with respect to any future Credit Extensions and Agent may at any time after such acquiescence require Borrower to comply with all such requirements. Any forbearance by Agent or a Lender in exercising any right or remedy under any of the Financing Documents, or otherwise afforded by applicable law, including any failure to accelerate the maturity date of the Credit Facilities, shall not be a waiver of or preclude the exercise of any right or remedy nor shall it serve as a novation of the Financing Documents or as a reinstatement of the Obligations or a waiver of such right of acceleration or the right to insist upon strict compliance of the terms of the Financing Documents. Agent's or any Lender's acceptance of payment of any sum secured by any of the Financing Documents after the due date of such payment shall not be a waiver of Agent's and such Lender's right to either require prompt payment when due of all other sums so secured or to declare a default for failure to make prompt payment. The procurement of insurance or the payment of taxes or other Liens or charges by Agent as the result of an Event of Default shall not be a waiver of Agent's right to accelerate the maturity of the Obligations, nor shall Agent's receipt of any condemnation awards, insurance proceeds, or damages under this Agreement operate to cure or waive any Credit Party's default in payment of sums secured by any of the Financing Documents.

(d) Without limiting the generality of anything contained in this Agreement or the other Financing Documents, each Borrower agrees that if an Event of Default is continuing (i) Agent and Lenders shall not be subject to any "one action" or "election of remedies" law or rule, and (ii) all Liens and other rights, remedies or privileges provided to Agent or Lenders shall remain in full force and effect until Agent or Lenders have exhausted all remedies against the Collateral and any other properties owned by Borrower and the Financing Documents and other security instruments or agreements securing the Obligations have been foreclosed, sold and/or otherwise realized upon in satisfaction of Borrower's obligations under the Financing Documents.

(e) Neither Agent nor any Lender shall be under any obligation to marshal any assets in payment of any or all of the Obligations. Nothing contained herein or in any other Financing Document shall be construed as requiring

Agent or any Lender to resort to any part of the Collateral for the satisfaction of any of Borrower's obligations under the Financing Documents in preference or priority to any other Collateral, and Agent may seek satisfaction out of all of the Collateral or any part thereof, in its absolute discretion in respect of Borrower's obligations under the Financing Documents. To the fullest extent permitted by law, each Borrower, for itself and its successors and assigns, waives in the event of foreclosure of any or all of the Collateral any equitable right otherwise available to any Credit Party which would require the separate sale of any of the Collateral or require Agent or Lenders to exhaust their remedies against any part of the Collateral before proceeding against any other part of the Collateral; and further in the event of such foreclosure each Borrower does hereby expressly consent to and authorize, at the option of Agent, the foreclosure and sale either separately or together of each part of the Collateral.

10.8 Injunctive Relief. The parties acknowledge and agree that, in the event of a breach or threatened breach of any Credit Party's obligations under any Financing Documents, Agent and Lenders may have no adequate remedy in money damages and, accordingly, shall be entitled to an injunction (including, without limitation, a temporary restraining order, preliminary injunction, writ of attachment, or order compelling an audit) against such breach or threatened breach, including, without limitation, maintaining any cash management and collection procedure described herein. However, no specification in this Agreement of a specific legal or equitable remedy shall be construed as a waiver or prohibition against any other legal or equitable remedies in the event of a breach or threatened breach of any provision of this Agreement. Each Credit Party waives, to the fullest extent permitted by law, the requirement of the posting of any bond in connection with such injunctive relief. By joining in the Financing Documents as a Credit Party, each Credit Party specifically joins in this **Section 10.8** as if this **Section 10.8** were a part of each Financing Document executed by such Credit Party.

11 NOTICES

All notices, consents, requests, approvals, demands, or other communications (collectively, "**Communication**") by any party to this Agreement or any other Financing Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail (if an email address is specified herein) or facsimile transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, facsimile number, or email address indicated below. Any of Agent, Lender or Borrower may change its mailing or electronic mail address or facsimile number by giving the other party written notice thereof in accordance with the terms of this **Article 11**.

If to Borrower:

Catabasis Pharmaceuticals, Inc.
One Kendall Square, Suite B14202
Cambridge, MA 02139
Attention: Chief Financial Officer, Ian Sanderson
Fax: (617) 273-2637
E-Mail: isanderson@catabasis.com

with a copy to:

WilmerHale
60 State Street
Boston, MA 02109 USA
Attention: Jamie N. Class
Fax: (617) 526-5000
E-Mail: jamie.class@wilmerhale.com

If to Agent:

MidCap Financial SBIC, LP
7255 Woodmont Avenue, Suite 200
Bethesda, Maryland 20814

Attention: Portfolio Management- Life Sciences
Fax: (301) 941-1450
E-Mail: lviera@midcapfinancial.com

with a copy to:

MC Serviceco, LLC
7255 Woodmont Avenue, Suite 200
Bethesda, Maryland 20814
Attention: General Counsel
Fax: (301) 941-1450
E-Mail: legalnotices@midcapfinancial.com

If to any Lender: at the address set forth in the signature pages to this Agreement or provided in connection with any assignment hereunder for such Lender.

12 CHOICE OF LAW, VENUE AND JURY TRIAL WAIVER

12.1 THIS AGREEMENT, EACH SECURED PROMISSORY NOTE AND EACH OTHER FINANCING DOCUMENT, AND THE RIGHTS, REMEDIES AND OBLIGATIONS OF THE PARTIES HERETO AND THERETO, AND ANY CLAIM, CONTROVERSY OR DISPUTE ARISING UNDER OR RELATED TO THIS AGREEMENT OR SUCH FINANCING DOCUMENT, THE RELATIONSHIP OF THE PARTIES, AND/OR THE

INTERPRETATION AND ENFORCEMENT OF THE RIGHTS AND DUTIES OF THE PARTIES AND ALL OTHER MATTERS RELATING HERETO, THERETO OR ARISING THEREFROM (WHETHER SOUNDING IN CONTRACT LAW, TORT LAW OR OTHERWISE), SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF MARYLAND, WITHOUT REFERENCE TO ITS CONFLICT OF LAW PROVISIONS. NOTWITHSTANDING THE FOREGOING, AGENT AND LENDERS SHALL HAVE THE RIGHT TO BRING ANY ACTION OR PROCEEDING AGAINST BORROWER OR ITS PROPERTY IN THE COURTS OF ANY OTHER JURISDICTION WHICH AGENT AND LENDERS (IN ACCORDANCE WITH THE PROVISIONS OF **SECTION 12.1**) DEEM NECESSARY OR APPROPRIATE TO REALIZE ON THE COLLATERAL OR TO OTHERWISE ENFORCE AGENT'S AND LENDERS' RIGHTS AGAINST BORROWER OR ITS PROPERTY. BORROWER EXPRESSLY SUBMITS AND CONSENTS IN ADVANCE TO SUCH JURISDICTION IN ANY ACTION OR SUIT COMMENCED IN ANY SUCH COURT, AND BORROWER HEREBY WAIVES ANY OBJECTION THAT IT MAY HAVE BASED UPON LACK OF PERSONAL JURISDICTION, IMPROPER VENUE, OR FORUM NON CONVENIENS AND HEREBY CONSENTS TO THE GRANTING OF SUCH LEGAL OR EQUITABLE RELIEF AS IS DEEMED APPROPRIATE BY SUCH COURT. BORROWER HEREBY WAIVES PERSONAL SERVICE OF THE SUMMONS, COMPLAINTS, AND OTHER PROCESS ISSUED IN SUCH ACTION OR SUIT AND AGREES THAT SERVICE OF SUCH SUMMONS, COMPLAINTS, AND OTHER PROCESS MAY BE MADE BY REGISTERED OR CERTIFIED MAIL ADDRESSED TO BORROWER AT THE ADDRESS SET FORTH IN **ARTICLE 11** OF THIS AGREEMENT AND THAT SERVICE SO MADE SHALL BE DEEMED COMPLETED UPON THE EARLIER TO OCCUR OF BORROWER'S ACTUAL RECEIPT THEREOF OR THREE (3) DAYS AFTER DEPOSIT IN THE U.S. MAIL, PROPER POSTAGE PREPAID.

12.2 TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, BORROWER, AGENT AND LENDERS EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE OTHER FINANCING DOCUMENTS OR ANY TRANSACTION CONTEMPLATED HEREBY, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR BOTH PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

12.3 Borrower, Agent and each Lender agree that each Credit Extension (including those made on the Closing Date) shall be deemed to be made in, and the transactions contemplated hereunder and in any other Financing Document shall be deemed to have been performed in, the State of Maryland.

13 GENERAL PROVISIONS

13.1 Successors and Assigns.

(a) This Agreement binds and is for the benefit of the successors and permitted assigns of each party. Borrower may not assign this Agreement or any rights or obligations under it without Agent's prior written consent (which may be granted or withheld in Agent's discretion). Any Lender may at any time assign to one or more Eligible Assignees all or any portion of such Lender's Applicable Commitment and/or Credit Extensions, together with all related obligations of such Lender hereunder. Borrower and Agent shall be entitled to continue to deal solely and directly with such Lender in connection with the interests so assigned until Agent shall have received and accepted an effective assignment agreement in form and substance acceptable to Agent, executed, delivered and fully completed by the applicable parties thereto, and shall have received such other information regarding such Eligible Assignee as Agent reasonably shall require. Notwithstanding anything set forth in this Agreement to the contrary, any Lender may at any time pledge or assign a security interest in all or any portion of its rights under this Agreement to secure obligations of such Lender, including any pledge or assignment to secure obligations to a Federal Reserve Bank; *provided, however,* that no such pledge or assignment shall release such Lender from any of its obligations hereunder or substitute any such pledgee or assignee for such Lender as a party hereto. If requested by Agent, Borrower agrees to (i) execute any documents reasonably required to effectuate and acknowledge each assignment of an Applicable Commitment or Credit Extension to an assignee hereunder, (ii) make Borrower's management available to meet with Agent and prospective participants and assignees of Applicable Commitments or Credit Extensions at any reasonable time and upon reasonable prior notice to the Borrower and (iii) assist Agent or the Lenders in the preparation of information relating to the financial affairs of Borrower as any prospective participant or assignee of an Applicable Commitment or Credit Extension reasonably may request.

(b) From and after the date on which the conditions described above have been met, (i) such Eligible Assignee shall be deemed automatically to have become a party hereto and, to the extent of the interests assigned to such Eligible Assignee pursuant to such assignment agreement, shall have the rights and obligations of a Lender hereunder, and (ii) the assigning Lender, to the extent that rights and obligations hereunder have been assigned by it pursuant to such assignment agreement, shall be released from its rights and obligations hereunder (other than those that survive termination). Upon the request of the Eligible Assignee (and, as applicable, the assigning Lender) pursuant to an effective assignment agreement, each Borrower shall execute and deliver to Agent for delivery to the Eligible Assignee (and, as applicable, the assigning Lender) secured notes in the aggregate principal amount of the Eligible Assignee's Credit Extensions or Applicable Commitments (and, as applicable, secured promissory notes in the principal amount of that portion of the principal amount of the Credit Extensions or Applicable Commitments retained by the assigning Lender).

(c) Agent, acting solely for this purpose as an agent of Borrower, shall maintain at its offices located in Bethesda, Maryland a copy of each assignment agreement delivered to it and a register for the recordation of the names and addresses of each Lender, and the commitments of, and principal amount (and stated interest) of the Credit Extensions owing to, such Lender pursuant to the terms hereof (the "**Register**"). The entries in such Register shall be conclusive, absent manifest error, and Borrower, Agent and Lenders may treat each Person whose name is recorded therein pursuant to the terms hereof as a Lender hereunder for all purposes of this Agreement, notwithstanding notice to the contrary. Such Register shall be available for inspection by Borrower and any Lender, at any reasonable time upon reasonable prior notice to Agent. Each Lender that sells a participation shall, acting solely for this purpose as an agent of the Borrower maintain a register on which it enters the name and address of each participant and the principal amounts (and stated interest) of each participant's interest in the Obligations (each, a "**Participant Register**"). The entries in the Participant Registers shall be conclusive, absent manifest error. Each Participant Register shall be available for inspection by Borrower and the Agent at any reasonable time upon reasonable prior notice to the applicable Lender; provided, that no Lender shall have any obligation to disclose all or any portion of the Participant Register (including the identity of any Participant or any information relating to a Participant's interest in any commitments, loans, letters of credit or its other obligations under any Loan Document) to any Person (including Borrower) except to the extent that such disclosure is necessary to establish that such commitment, loan, letter of credit or other obligation is in registered form under Section 5f.103-1(c) of the United States Treasury Regulations. For the avoidance of doubt, the Agent (in its capacity as Agent) shall have no responsibility for maintaining a Participant Register.

(d) Notwithstanding anything to the contrary contained in this Agreement, the Credit Extensions (including any Secured Promissory Notes evidencing such Credit Extensions) are registered obligations, the right, title and interest of the Lenders and their assignees in and to such Credit Extensions shall be transferable only upon notation of such transfer in the Register and no assignment thereof shall be effective until recorded therein. This Agreement shall be construed so that the Credit Extensions are at all times maintained in "registered form" within the meaning of Sections 163(f), 871(h)(2) and 881(c)(2) of the Internal Revenue Code and Section 5f.103-1(c) of the United States Treasury Regulations.

13.2 Indemnification.

(a) Borrower hereby agrees to promptly pay (i) all costs and expenses of Agent (including, without limitation, the reasonable fees, costs and expenses of counsel to, and independent appraisers and consultants retained by Agent) in connection with the examination, review, due diligence investigation, documentation, negotiation, and closing of the transactions contemplated by the Financing Documents, in connection with any assignment by a Lender of any portion of its Applicable Commitment and/or Credit Extensions, in connection with the performance by Agent of its rights and remedies under the Financing Documents and in connection with the continued administration of the Financing Documents including (A) any amendments, modifications, consents and waivers to and/or under any and all Financing Documents, and (B) any periodic public record searches conducted by or at the request of Agent (including, without limitation, title investigations, UCC searches, fixture filing searches, judgment, pending litigation and tax lien searches and searches of applicable corporate, limited liability, partnership and related records concerning the continued existence, organization and good standing of certain Persons); (ii) without limitation of the preceding clause (i), all costs and expenses of Agent in connection with the creation, perfection and maintenance of Liens pursuant to the Financing Documents; (iii) without limitation of the preceding clause (i), all costs and expenses of Agent in connection with (A) protecting, storing, insuring, handling, maintaining or selling any Collateral, (B) any litigation, dispute, suit or proceeding relating to any Financing Document, and (C) any workout, collection, bankruptcy, insolvency and other enforcement proceedings under any and all of the Financing Documents; (iv) without limitation of the preceding clause (i), all costs and expenses of Agent in connection with Agent's reservation of funds in anticipation of the funding of the Credit Extensions to be made hereunder; and (v) all costs and expenses incurred by Agent or Lenders in connection with any litigation, dispute, suit or proceeding relating to any Financing Document and in connection with any workout, collection, bankruptcy, insolvency and other enforcement proceedings under any and all Financing Documents, whether or not Agent or Lenders are a party thereto.

(b) Borrower hereby agrees to indemnify, pay and hold harmless Agent and Lenders and the officers, directors, employees, trustees, agents, investment advisors, collateral managers, servicers, and counsel of Agent and Lenders (collectively called the "**Indemnitees**") from and against any and all liabilities, obligations, losses, damages, penalties, actions, judgments, suits, claims, costs, expenses and disbursements of any kind or nature whatsoever (including the fees and disbursements of counsel for such Indemnitee) in connection with any investigative, response, remedial, administrative or judicial matter or proceeding, whether or not such Indemnitee shall be designated a party thereto and including any such proceeding initiated by or on behalf of a Credit Party, and the reasonable expenses of investigation by engineers, environmental consultants and similar technical personnel and any commission, fee or compensation claimed by any broker (other than any broker retained by Agent or Lenders) asserting any right to payment for the transactions contemplated hereby, which may be imposed on, incurred by or asserted against such Indemnitee as a result of or in connection with the transactions contemplated hereby and the use or intended use of the proceeds of the Credit Facilities, except that Borrower shall have no obligation hereunder to an Indemnitee with respect to any liability resulting from the gross negligence or willful misconduct of such Indemnitee, as determined by a final non-appealable judgment of a court of competent jurisdiction. To the extent that the undertaking set forth in the immediately preceding sentence may be unenforceable, Borrower shall contribute the maximum portion which it is permitted to pay and satisfy under applicable Law to the payment and satisfaction of all such indemnified liabilities incurred by the Indemnitees or any of them. No Indemnitee shall be liable for any damages arising from the use by unintended recipients of any information or other materials distributed by it through telecommunications, electronic or other information transmission systems in connection with this Agreement or the other Financing Documents or the transactions contemplated hereby or thereby.

(c) Notwithstanding any contrary provision in this Agreement, the obligations of Borrower under this **Section 13.2** shall survive the payment in full of the Obligations and the termination of this Agreement. NO INDEMNITEE SHALL BE RESPONSIBLE OR LIABLE TO ANY CREDIT PARTY OR TO ANY OTHER PARTY TO ANY FINANCING DOCUMENT, ANY SUCCESSOR, ASSIGNEE OR THIRD PARTY BENEFICIARY OR ANY OTHER PERSON ASSERTING CLAIMS DERIVATIVELY THROUGH SUCH PARTY, FOR INDIRECT, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES WHICH MAY BE ALLEGED AS A RESULT OF CREDIT HAVING BEEN EXTENDED, SUSPENDED OR TERMINATED UNDER THIS AGREEMENT OR ANY OTHER FINANCING DOCUMENT OR AS A RESULT OF ANY OTHER TRANSACTION CONTEMPLATED HEREUNDER OR THEREUNDER.

13.3 Time of Essence. Time is of the essence for the payment and performance of the Obligations in this Agreement.

13.4 Severability of Provisions. Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

13.5 Correction of Financing Documents. Agent and the Lenders may correct patent errors and fill in any blanks in this Agreement and the other Financing Documents consistent with the agreement of the parties.

13.6 Integration. This Agreement and the Financing Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of this Agreement and the Financing Documents merge into this Agreement and the Financing Documents.

13.7 Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement. Delivery of an executed signature page of this Agreement by facsimile transmission or electronic transmission shall be as effective as delivery of a manually executed counterpart hereof.

13.8 Survival. All covenants, representations and warranties made in this Agreement continue in full force until this Agreement has terminated pursuant to its terms and all Obligations (other than inchoate indemnity obligations and any other obligations which, by their terms, are to survive the termination of this Agreement) have been satisfied. Notwithstanding the foregoing, the obligations of Borrower under **Section 6.15** shall survive the termination of this Agreement and satisfaction of the Obligations. The obligation of Borrower in **Section 13.2** to indemnify each Lender and Agent shall survive until the statute of limitations with respect to such claim or cause of action shall have run. All powers of attorney and appointments of Agent or any Lender as Borrower's attorney in fact hereunder, and all of Agent's and Lenders' rights and powers in respect thereof, are coupled with an interest, are irrevocable until all Obligations (other than inchoate indemnity obligations and any other obligations which, by their terms, are to survive the termination of this Agreement) have been fully repaid and performed and Agent's and the Lenders' obligation to provide Credit Extensions terminates.

13.9 Confidentiality. In handling any confidential information of Borrower, each of the Lenders and Agent shall use all reasonable efforts to maintain the confidentiality of information obtained by it pursuant to any Financing Document and designated in writing by any Credit Party as confidential, but disclosure

of information may be made: (a) to the Lenders' and Agent's Subsidiaries or Affiliates; (b) to prospective transferees or purchasers of any interest in the Credit Extensions so long as such Persons are bound by the obligations of confidentiality to Agent or a Lender, as applicable; (c) as required by Law, regulation, subpoena, order or other legal, administrative, governmental or regulatory request; (d) to regulators or as otherwise required in connection with an examination or audit, or to any nationally recognized rating agency; (e) as Agent or any Lender considers appropriate in exercising remedies under the Financing Documents; (f) to financing sources that are advised of the confidential nature of such information and are instructed to keep such information confidential; (g) to third party service providers of the Lenders and/or Agent so long as such service providers are bound to such Lender or Agent by obligations of confidentiality; and (h) in connection with any litigation or other proceeding to which such Lender or Agent or any of their Affiliates is a party or bound, or to the extent necessary to respond to public statements or disclosures by Credit Parties or their Affiliates referring to a Lender or Agent or any of their Affiliates. Confidential information does not include information that either: (i) is in the public domain or in the Lenders' and/or Agent's possession when disclosed to the Lenders and/or Agent, or becomes part of the public domain after disclosure to the Lenders and/or Agent; or (ii) is disclosed to the Lenders and/or Agent by a third party, if the Lenders and/or Agent does not know that the third party is prohibited from disclosing the information. Agent and/or Lenders may use confidential information for any purpose, including, without limitation, for the development of client databases, reporting purposes, and market analysis, so long as Agent and/or Lenders, as applicable, do not disclose Borrower's identity or the identity of any Person associated with Borrower unless otherwise permitted by this Agreement. The provisions of the immediately preceding sentence shall survive the termination of this Agreement. The agreements provided under this **Section 13.9** supersede all prior agreements, understanding, representations, warranties, and negotiations between the parties about the subject matter of this **Section 13.9**.

13.10 Right of Set-off. Borrower hereby grants to Agent and to each Lender, a lien, security interest and right of set-off as security for all Obligations to Agent and each Lender hereunder, whether now existing or hereafter arising upon and against all deposits, credits, collateral and property, now or hereafter in the possession, custody, safekeeping or control of Agent or the Lenders or any entity under the control of Agent or the Lenders (including an Agent or Lender Affiliate) or in transit to any of them. At any time after the occurrence and during the continuance of an Event of Default, without demand or notice, Agent or the Lenders may set-off the same or any part thereof and apply the same to any liability or obligation of

Borrower even though unmatured and regardless of the adequacy of any other collateral securing the Obligations. ANY AND ALL RIGHTS TO REQUIRE AGENT TO EXERCISE ITS RIGHTS OR REMEDIES WITH RESPECT TO ANY OTHER COLLATERAL WHICH SECURES THE OBLIGATIONS, PRIOR TO EXERCISING ITS RIGHT OF SET-OFF WITH RESPECT TO SUCH DEPOSITS, CREDITS OR OTHER PROPERTY OF BORROWER, ARE HEREBY KNOWINGLY, VOLUNTARILY AND IRREVOCABLY WAIVED.

13.11 Publicity. Subject to the immediately succeeding sentence, Borrower will not directly or indirectly publish, disclose or otherwise use in any public disclosure, advertising material, promotional material, press release or interview, any reference to the name, logo or any trademark of Agent or any Lender or any of their Affiliates or any reference to this Agreement or the financing evidenced hereby, in any case except as required by applicable Law, subpoena or judicial or similar order, in which case Borrower shall endeavor to give Agent prior written notice of such publication or other disclosure. Each of the Agent, the Lender and Borrower (the "**Authorizing Person**") hereby authorizes each other party (the "**Publishing Person**") to publish, disclose and otherwise use the name of such Agent, Lender and Borrower, the existence of the financing arrangements referenced under this Agreement, the primary purpose and/or structure of those arrangements, the amount of credit extended under each facility, the title and role of each party to this Agreement, and the total amount of the financing evidenced hereby in any "tombstone", comparable advertisement or press release which such Publishing Person elects to submit for publication. In addition, each Lender and Borrower agrees that Agent and each Lender may provide lending industry trade organizations with information necessary and customary for inclusion in league table measurements after the Closing Date (but in all events, without disclosing any confidential information). With respect to any of the foregoing, such authorization shall be subject to such Publishing Person providing the Authorizing Persons with an opportunity to review and confer with such Publishing Person regarding, and approve, the contents of any such tombstone, advertisement or information, as applicable, prior to its initial submission for publication, but subsequent publications of the same tombstone, advertisement or information shall not require such Publishing Person's approval.

13.12 No Strict Construction**.** The parties hereto have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the parties hereto and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provisions of this Agreement.

13.13 Approvals. Unless expressly provided herein to the contrary, any approval, consent, waiver or satisfaction of Agent or Lenders with respect to any matter that is the subject of this Agreement or the other Financing Documents may be granted or withheld by Agent and Lenders in their sole and absolute discretion and credit judgment.

13.14 Amendments; Required Lenders; Inter-Lender Matters.

(a) No amendment, modification, termination or waiver of any provision of this Agreement or any other Financing Document, no approval or consent thereunder, or any consent to any departure by Borrower therefrom (in each case, other than amendments, waivers, approvals or consents deemed ministerial by Agent), shall in any event be effective unless the same shall be in writing and signed by Borrower, Agent and Required Lenders. Except as set forth in clause (b) below, all such amendments, modifications, terminations or waivers requiring the consent of the "Lenders" shall require the written consent of Required Lenders.

(b) No amendment, modification, termination or waiver of any provision of this Agreement or any other Financing Document shall, unless in writing and signed by Agent and by each Lender directly affected thereby: (i) increase or decrease the Applicable Commitment of any Lender (which shall be deemed to affect all Lenders), (ii) reduce the principal of or rate of interest on any Obligation or the amount of any fees payable hereunder or under any Financing Document, (iii) postpone the date fixed for or waive any payment of principal of or interest on any Credit Extension, or any fees or reimbursement obligation hereunder, (iv) release all or substantially all of the Collateral, or consent to a transfer of any of the Intellectual Property, in each case, except as otherwise expressly permitted in the Financing Documents (which shall be deemed to affect all Lenders), (v) subordinate the lien granted in favor of Agent securing the Obligations (which shall be deemed to affect all Lenders, except as otherwise provided below), (vi) release a Credit Party from, or consent to a Credit Party's assignment or delegation of, such Credit Party's obligations hereunder and under the other Financing Documents or any Guarantor from its guaranty of the Obligations (which shall be deemed to affect all Lenders) or (vii) amend, modify, terminate or waive this **Section 13.14(b)** or the definition of "Required Lenders" or "Pro Rata Share" or any other provision hereof specifying the number or percentage of Lenders required to amend, waive or otherwise modify any rights hereunder or make any determination or grant any consent hereunder, without the consent of each Lender. For

purposes of the foregoing, no Lender shall be deemed affected by (i) waiver of the imposition of the Default Rate or imposition of the Default Rate to only a portion of the Obligations, (ii) waiver of the accrual of late charges, (iii) waiver of any fees, costs and expenses solely payable to Agent or any other Lender under

the Financing Documents (which waiver shall require the consent of the applicable Agent or Lender), (iv) subordination of a lien granted in favor of Agent provided such subordination is limited to equipment being financed by a third party providing Permitted Indebtedness (and related proceeds relating solely to the sale of such equipment). Notwithstanding any provision in this **Section 13.14** to the contrary, no amendment, modification, termination or waiver affecting or modifying the rights or obligations of Agent hereunder shall be effective unless signed by Agent and Required Lenders.

(c) Agent shall not grant its written consent to any deviation or departure by Borrower or any Credit Party from the provisions of **Article 7** without the prior written consent of the Required Lenders. Required Lenders shall have the right to direct Agent to take any action described in **Section 10.2(b)**. Upon the occurrence of any Event of Default, Agent shall have the right to exercise any and all remedies referenced in **Section 10.2** without the written consent of Required Lenders following the occurrence of an "Exigent Circumstance" (as defined below). All matters requiring the satisfaction or acceptance of Agent in the definition of Subordinated Debt shall further require the satisfaction and acceptance of each Required Lender. Any reference in this Agreement to an allocation between or sharing by the Lenders of any right, interest or obligation "ratably," "proportionally" or in similar terms shall refer to Pro Rata Share unless expressly provided otherwise. As used in this **Section 13.14(c)**, "**Exigent Circumstance**" means any event or circumstance that, in the reasonable judgment of Agent, imminently threatens the ability of Agent to realize upon all or any material portion of the Collateral, such as, without limitation, fraudulent removal, concealment, or abscondment thereof, destruction or material waste thereof, or failure of Borrower after reasonable demand to maintain or reinstate adequate casualty insurance coverage, or which, in the judgment of Agent, could result in a material diminution in value of the Collateral.

13.15 Borrower Liability. If there is more than one entity comprising Borrower, then (a) any Borrower may, acting singly, request Credit Extensions hereunder, (b) each Borrower hereby appoints the other as agent for the other for all purposes hereunder, including with respect to requesting Credit Extensions hereunder, (c) each Borrower shall be jointly and severally obligated to pay and perform all obligations under the Financing Documents, including, but not limited to, the obligation to repay all Credit Extensions made hereunder and all other Obligations, regardless of which Borrower actually receives said Credit Extensions, as if each Borrower directly received all Credit Extensions, and (d) each Borrower waives (i) any suretyship defenses available to it under the Code or any other applicable law, and (ii) any right to require the Lenders or Agent to: (A) proceed against any Borrower or any other person; (B) proceed against or exhaust any security; or (C) pursue any other remedy. The Lenders or Agent may exercise or not exercise any right or remedy they have against any Credit Party or any security (including the right to foreclose by judicial or non-judicial sale) without affecting any other Credit Party's liability or any Lien against any other Credit Party's assets. Notwithstanding any other provision of this Agreement or other related document, until payment in full of the Obligations and termination of the Applicable Commitments, each Borrower irrevocably waives all rights that it may have at law or in equity (including, without limitation, any law subrogating Borrower to the rights of the Lenders and Agent under this Agreement) to seek contribution, indemnification or any other form of reimbursement from any other Credit Party, or any other Person now or hereafter primarily or secondarily liable for any of the Obligations, for any payment made by any Credit Party with respect to the Obligations in connection with this Agreement or otherwise and all rights that it might have to benefit from, or to participate in, any security for the Obligations as a result of any payment made by a Credit Party with respect to the Obligations in connection with this Agreement or otherwise. Any agreement providing for indemnification, reimbursement or any other arrangement prohibited under this **Section 13.15** shall be null and void. If any payment is made to a Credit Party in contravention of this **Section 13.15**, such Credit Party shall hold such payment in trust for the Lenders and Agent and such payment shall be promptly delivered to Agent for application to the Obligations, whether matured or unmatured.

13.16 Reinstatement. This Agreement shall remain in full force and effect and continue to be effective should any petition or other proceeding be filed by or against any Credit Party for liquidation or reorganization, should any Credit Party become insolvent or make an assignment for the benefit of any creditor or creditors or should an interim receiver, receiver, receiver and manager or trustee be appointed for all or any significant part of any Credit Party's assets, and shall continue to be effective or to be reinstated, as the case may be, if at any time payment and performance of the Obligations, or any part thereof, is, pursuant to applicable law, rescinded or reduced in amount, or must otherwise be restored or returned by any obligee of the Obligations, whether as a fraudulent preference reviewable transaction or otherwise, all as though such payment or performance had not been made. In the event that any payment, or any part thereof, is rescinded, reduced, restored or returned, the Obligations shall be reinstated and deemed reduced only by such amount paid and not so rescinded, reduced, restored or returned.

13.17. USA PATRIOT Act Notification. Agent (for itself and not on behalf of any Lender) and each Lender hereby notifies each Borrower that pursuant to the requirements of the USA PATRIOT Act, it is required to obtain, verify and record certain information and documentation that identifies Borrower, which information includes the name and address of Borrower and such other information that will allow Agent or such Lender, as applicable, to identify Borrower in accordance with the USA PATRIOT Act.

13.18 Warrants. Notwithstanding anything to the contrary herein, any warrants issued to the Lenders by any Credit Party, the stock issuable thereunder, any equity securities purchased by Lenders, any amounts paid thereunder, any dividends, and any other rights in connection therewith shall not be subject to the terms and conditions of this Agreement and shall not be included as "Obligations" (other than reimbursable fees, costs and expenses associated therewith and reimbursable pursuant to and prior to the termination of, or in connection with the payment in full of the "Obligations" under, this Agreement and the other Loan Documents), provided that the foregoing shall not relieve Borrower of its obligation to issue any Warrant pursuant to the terms of this Agreement. Nothing in this Agreement shall affect any Lender's rights under any such warrants (including the Warrants), stock, or other equity securities to administer, manage, transfer, assign, or exercise such warrants, stock, or other equity securities for its own account.

14 AGENT

14.1 Appointment and Authorization of Agent. Each Lender hereby irrevocably appoints, designates and authorizes Agent to take such action on its behalf under the provisions of this Agreement and each other Financing Document and to exercise such powers and perform such duties as are expressly delegated to it by the terms of this Agreement or any other Financing Document, together with such powers as are reasonably incidental thereto. The provisions of this **Article 14** are solely for the benefit of Agent and Lenders and none of Credit Parties nor any other Person shall have any rights as a third party beneficiary of any of the provisions hereof. The duties of Agent shall be mechanical and administrative in nature. Notwithstanding any provision to the contrary contained elsewhere herein or in any other Financing Document, Agent shall not have any duties or responsibilities, except those expressly set forth herein, nor shall Agent have or be deemed to have any fiduciary relationship with any Lender or participant, and no implied covenants, functions, responsibilities, duties, obligations or liabilities shall be read into this Agreement or any other Financing Document or otherwise exist against Agent. Without limiting the generality of the foregoing sentence, the use of the term "agent" herein and in the other Financing Documents with reference to Agent is not intended to connote any fiduciary or other implied (or express) obligations arising under agency doctrine of any applicable Law. Instead, such term is used merely as a matter of market custom, and is intended to create or reflect only an administrative relationship between independent contracting parties. Without limiting the generality of the foregoing, Agent shall have the sole and exclusive right and authority (to the exclusion of the Lenders), and is hereby authorized, to (a) act as collateral agent for Agent and each Lender for purposes of the perfection of all liens created by the Financing Documents and all other purposes stated therein, (b) manage, supervise and otherwise deal with the Collateral, (c) take such other action as is necessary or desirable to maintain the perfection and priority of the liens created or purported to be created by the Financing Documents, (d) except as may be otherwise specified in any Financing Document, exercise all remedies given to Agent and the other Lenders with respect to the Collateral, whether under the Financing Documents, applicable law or otherwise and (e) execute any amendment, consent or waiver under the

Financing Documents on behalf of any Lender that has consented in writing to such amendment, consent or waiver; *provided*, *however*, that Agent hereby appoints, authorizes and directs each Lender to act as collateral sub-agent for Agent and the Lenders for purposes of the perfection of all liens with respect to the Collateral, including any Collateral Account maintained by a Credit Party with, and cash and cash equivalents held by, such Lender, and may further authorize and direct the Lenders to take further actions as collateral sub-agents for purposes of enforcing such liens or otherwise to transfer the Collateral subject thereto to Agent, and each Lender hereby agrees to take such further actions to the extent, and only to the extent, so authorized and directed.

14.2 Successor Agent.

(a) Agent may at any time assign its rights, powers, privileges and duties hereunder to (i) another Lender or an Affiliate of Agent or any Lender or any Approved Fund, or (ii) any Person to whom Agent, in its capacity as a Lender, has assigned (or will assign, in conjunction with such assignment of agency rights hereunder) fifty percent (50%) or more of the Credit Extensions or Applicable Commitments then held by Agent (in its capacity as a Lender), in each case without the consent of the Lenders or Borrower. Following any such assignment, Agent shall give notice to the Lenders and Borrower. An assignment by Agent pursuant to this **subsection (a)** shall not be deemed a resignation by Agent for purposes of **subsection (b)** below.

(b) Without limiting the rights of Agent to designate an assignee pursuant to **subsection (a)** above, Agent may at any time give notice of its resignation to the Lenders and Borrower. Upon receipt of any such notice of resignation, Required Lenders shall have the right to appoint a successor Agent. If no such successor shall have been so appointed by Required Lenders and shall have accepted such appointment within ten (10) Business Days after the retiring Agent gives notice of its resignation, then the retiring Agent may, on behalf of the Lenders, appoint a successor Agent; *provided*, *however,* that if Agent shall notify Borrower and the Lenders that no Person has accepted such appointment, then such resignation shall nonetheless become effective in accordance with such notice from Agent that no Person has accepted such appointment and, from and following delivery of such notice, (i) the retiring Agent shall be discharged from its duties and obligations hereunder and under the other Financing Documents, and (ii) all payments, communications and determinations provided to be made by, to or through Agent shall instead be made by or to each Lender directly, until such time as Required Lenders appoint a successor Agent as provided for above in this **subsection (b)**.

(c) Upon (i) an assignment permitted by **subsection (a)** above, or (ii) the acceptance of a successor's appointment as Agent pursuant to **subsection (b)** above, such successor shall succeed to and become vested with all of the rights, powers, privileges and duties of the retiring (or retired) Agent, and the retiring Agent shall be discharged from all of its duties and obligations hereunder and under the other Financing Documents (if not already discharged therefrom as provided above in this **subsection (c)**). The fees payable by Borrower to a successor Agent shall be the same as those payable to its predecessor unless otherwise agreed between Borrower and such successor. After the retiring Agent's resignation hereunder and under the other Financing Documents, the provisions of this **Article 14** shall continue in effect for the benefit of such retiring Agent and its sub-agents in respect of any actions taken or omitted to be taken by any of them while the retiring Agent was acting or was continuing to act as Agent.

14.3 Delegation of Duties. Agent may execute any of its duties under this Agreement or any other Financing Document by or through its, or its Affiliates', agents, employees or attorneys-in-fact and shall be entitled to obtain and rely upon the advice of counsel and other consultants or experts concerning all matters pertaining to such duties. Agent shall not be responsible for the negligence or misconduct of any agent or attorney-in-fact that it selects in the absence of gross negligence or willful misconduct. Any such Person to whom Agent delegates a duty shall benefit from this **Article 14** to the extent provided by Agent.

14.4 Liability of Agent. Except as otherwise provided herein, no "Agent-Related Person" (as defined below) shall (a) be liable for any action taken or omitted to be taken by any of them under or in connection with this Agreement or any other Financing Document or the transactions contemplated hereby (except for its own gross negligence or willful misconduct in connection with its duties expressly set forth herein), or (b) be responsible in any manner to any Lender or participant for any recital, statement, representation or warranty made by any Credit Party or any officer thereof, contained herein or in any other Financing Document, or in any certificate, report, statement or other document referred to or provided for in, or received by Agent under or in connection with, this Agreement or any other Financing Document, or the validity, effectiveness, genuineness, enforceability or sufficiency of this Agreement or any other Financing Document, or for any failure of any Credit Party or any other party to any Financing Document to perform its obligations hereunder or thereunder. No Agent-Related Person shall be under any obligation to any Lender or participant to ascertain or to inquire as to the observance or performance of any of the agreements contained in, or conditions of, this Agreement or any other Financing Document, or to inspect the Collateral, other properties or books or records of any Credit Party or any Affiliate thereof. The term "**Agent-Related Person**" means the Agent, together with its Affiliates, and the officers, directors, employees, agents, advisors, auditors and attorneys-in-fact of such Persons; *provided*, *however*, that no Agent-Related Person shall be an Affiliate of Borrower.

14.5 Reliance by Agent. Agent shall be entitled to rely, and shall be fully protected in relying, upon any writing, communication, signature, resolution, representation, notice, consent, certificate, affidavit, letter, telegram, facsimile, telex or telephone message, electronic mail message, statement or other document or conversation believed by it to be genuine and correct and to have been signed, sent or made by the proper Person or Persons, and upon advice and statements of legal counsel (including counsel to Borrower), independent accountants and other experts selected by Agent. Agent shall be fully justified in failing or refusing to take any action under any Financing Document (a) if such action would, in the opinion of Agent, be contrary to law or any Financing Document, (b) if such action would, in the opinion of Agent, expose Agent to any potential liability under any law, statute or regulation or (c) if Agent shall not first have received such advice or concurrence of all Lenders as it deems appropriate and, if it so requests, it shall first be indemnified to its satisfaction by the Lenders against any and all liability and expense which may be incurred by it by reason of taking or continuing to take any such action. Agent shall in all cases be fully protected in acting, or in refraining from acting, under this Agreement or any other

Financing Document in accordance with a request or consent of all Lenders (or Required Lenders where authorized herein) and such request and any action taken or failure to act pursuant thereto shall be binding upon all the Lenders.

14.6 Notice of Default. Agent shall not be deemed to have knowledge or notice of the occurrence of any Default and/or Event of Default, unless Agent shall have received written notice from a Lender or Borrower, describing such default or Event of Default. Agent will notify the Lenders of its receipt of any such notice. While an Event of Default has occurred and is continuing, Agent may (but shall not be obligated to) take such action, or refrain from taking such action, with respect to such Event of Default as Agent shall deem advisable or in the best interest of the Lenders, including without limitation, satisfaction of other security interests, liens or encumbrances on the Collateral not permitted under the Financing Documents, payment of taxes on behalf of Borrower or any other Credit Party, payments to landlords, warehouseman, bailees and other Persons in possession of the Collateral and other actions to protect and safeguard the Collateral, and actions with respect to insurance claims for casualty events affecting a Credit Party and/or the Collateral.

14.7 Credit Decision; Disclosure of Information by Agent. Each Lender acknowledges that no Agent-Related Person has made any representation or warranty to it, and that no act by Agent hereafter taken, including any consent to and acceptance of any assignment or review of the affairs of Borrower or any Affiliate thereof, shall be deemed to constitute any representation or warranty by any Agent-Related Person to any Lender as to any matter, including whether Agent-Related Persons have disclosed material information in their possession. Each Lender represents to Agent that it has, independently and without reliance upon any Agent-Related Person and based on such documents and information as it has deemed appropriate, made its own appraisal of, and investigation into, the business, prospects, operations, property, financial and other condition and creditworthiness of the Credit Parties, and all applicable bank or other regulatory Laws relating to the transactions contemplated hereby, and made its own decision to enter into this Agreement and to extend credit to Borrower hereunder. Each Lender also represents that it will, independently and without reliance upon any Agent-Related Person and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit analysis, appraisals and decisions in taking or not taking action under this Agreement and the other Financing Documents, and to make such investigations as it deems necessary to inform itself as to the business, prospects, operations, property, financial and other condition and creditworthiness of Borrower. Except for notices, reports and other documents expressly required to be furnished to the Lenders by Agent herein, Agent shall not have any duty or responsibility to provide any Lender with any credit or other information concerning the business, prospects, operations, property, financial and other condition or creditworthiness of any Credit Party which may come into the possession of any Agent-Related Person.

14.8 Indemnification of Agent. Whether or not the transactions contemplated hereby are consummated, each Lender shall, severally and pro rata based on its respective Pro Rata Share, indemnify upon demand each Agent-Related Person (to the extent not reimbursed by or on behalf of Borrower and without limiting the obligation of Borrower to do so), and hold harmless each Agent-Related Person from and against any and all Indemnified Liabilities (which shall not include legal expenses of Agent incurred in connection with the closing of the transactions contemplated by this Agreement) incurred by it; *provided, however*, that no Lender shall be liable for the payment to any Agent-Related Person of any portion of such Indemnified Liabilities to the extent determined in a judgment by a court of competent jurisdiction to have resulted from such Agent-Related Person's own gross negligence or willful misconduct; *provided*, *however*, that no action taken in accordance with the directions of the Required Lenders shall be deemed to constitute gross negligence or willful misconduct for purposes of this **Section 14.8**. Without limitation of the foregoing, each Lender shall, severally and pro rata based on its respective Pro Rata Share, reimburse Agent upon demand for its ratable share of any costs or out-of-pocket expenses (including Protective Advances incurred after the closing of the transactions contemplated by this Agreement) incurred by Agent (in its capacity as Agent, and not as a Lender) in connection with the preparation, execution, delivery, administration, modification, amendment or enforcement (whether through negotiations, legal proceedings or otherwise) of, or legal advice in respect of rights or responsibilities under, this Agreement, any other Financing Document, or any document contemplated by or referred to herein, to the extent that Agent is not reimbursed for such expenses by or on behalf of Borrower. The undertaking in this **Section 14.8** shall survive the payment in full of the Obligations, the termination of this Agreement and the resignation of Agent.

14.9 Agent in its Individual Capacity. With respect to its Credit Extensions, MidCap shall have the same rights and powers under this Agreement as any other Lender and may exercise such rights and powers as though it were not Agent, and the terms "Lender" and "Lenders" include MidCap in its individual capacity. MidCap and its Affiliates may lend money to, invest in, and generally engage in any kind of business with, any Credit Party and any of their Affiliates and any person who may do business with or own securities of any Credit Party or any of their Affiliates, all as if MidCap were not Agent and without any duty to account therefor to Lenders. MidCap and its Affiliates may accept fees and other consideration from

a Credit Party for services in connection with this Agreement or otherwise without having to account for the same to Lenders. Each Lender acknowledges the potential conflict of interest between MidCap as a Lender holding disproportionate interests in the Credit Extensions and MidCap as Agent, and expressly consents to, and waives, any claim based upon, such conflict of interest.

14.10 Agent May File Proofs of Claim. In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to any Credit Party, Agent (irrespective of whether the principal of any Credit Extension, shall then be due and payable as herein expressed or by declaration or otherwise and irrespective of whether Agent shall have made any demand on such Credit Party) shall be entitled and empowered, by intervention in such proceeding or otherwise:

(a) to file and prove a claim for the whole amount of the principal and interest owing and unpaid in respect of the Credit Extensions and all other Obligations that are owing and unpaid and to file such other documents as may be necessary or advisable in order to have the claims of the Lenders and Agent (including any claim for the reasonable compensation, expenses, disbursements and advances of the Lenders and Agent and their respective agents and counsel and all other amounts due the Lenders and Agent allowed in such judicial proceeding); and

(b) to collect and receive any monies or other property payable or deliverable on any such claims and to distribute the same;

and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Lender to make such payments to Agent and, in the event that Agent shall consent to the making of such payments directly to the Lenders, to pay to Agent any amount due for the reasonable compensation, expenses, disbursements and advances of Agent and its agents and counsel, including Protective Advances. To the extent that Agent fails timely to do so, each Lender may file a claim relating to such Lender's claim.

14.11 Collateral and Guaranty Matters. The Lenders irrevocably authorize Agent, at its option and in its discretion, to release (a) any Credit Party and any Lien on any Collateral granted to or held by Agent under any Financing Document upon the date that all Obligations due hereunder have been paid in full in cash and no Applicable Commitments or other obligations of any Lender to provide funds to Borrower under this Agreement remain outstanding, and (b) any Lien on any Collateral that is transferred or to be transferred as part of or in connection with any transfer permitted hereunder or under any other Financing Document. Upon request by Agent at any time, all Lenders will confirm in writing Agent's authority to release its interest in particular types or items of Collateral pursuant to this **Section 14.11**.

14.12 Advances; Payments; Non-Funding Lenders.

(a) Advances; Payments. If Agent receives any payment for the account of Lenders on or prior to 11:00 a.m. (New York time) on any Business Day, Agent shall pay to each applicable Lender such Lender's Pro Rata Share of such payment on such Business Day. If Agent receives any payment for the account of Lenders after 11:00 a.m. (New York time) on any Business Day, Agent shall pay to each applicable Lender such Lender's Pro Rata Share of such payment on the next Business Day. To the extent that any Lender has failed to fund any Credit Extension (a "**Non-Funding Lender**"), Agent shall be entitled to set-off the funding short-fall against that Non-Funding Lender's Pro Rata Share of all payments received from Borrower.

(b) Return of Payments.

(i) If Agent pays an amount to a Lender under this Agreement in the belief or expectation that a related payment has been or will be received by Agent from a Credit Party and such related payment is not received by Agent, then Agent will be entitled to recover such amount (including interest accruing on such amount at the Federal Funds Rate for the first Business Day and thereafter, at the rate otherwise applicable to such Obligation) from such Lender on demand without set-off, counterclaim or deduction of any kind.

(ii) If Agent determines at any time that any amount received by Agent under this Agreement must be returned to a Credit Party or paid to any other person pursuant to any insolvency law or otherwise, then, notwithstanding any other term or condition of this Agreement or any other Financing Document, Agent will not be required

to distribute any portion thereof to any Lender. In addition, each Lender will repay to Agent on demand any portion of such amount that Agent has distributed to such Lender, together with interest at such rate, if any, as Agent is required to pay to a Credit Party or such other person, without set-off, counterclaim or deduction of any kind.

14.13 Miscellaneous.

(a) Neither Agent nor any Lender shall be responsible for the failure of any Non-Funding Lender to make a Credit Extension or make any other advance required hereunder. The failure of any Non-Funding Lender to make any Credit Extension or any payment required by it hereunder shall not relieve any other Lender (each such other Lender, an "**Other Lender**") of its obligations to make the Credit Extension or payment required by it, but neither any Other Lender nor Agent shall be responsible for the failure of any Non-Funding Lender to make a Credit Extension or make any other payment required hereunder. Notwithstanding anything set forth herein to the contrary, a Non-Funding Lender shall not have any voting or consent rights under or with respect to any Financing Document or constitute a "Lender" (or be included in the calculation of "Required Lender" hereunder) for any voting or consent rights under or with respect to any Financing Document. At Borrower's request, Agent or a person reasonably acceptable to Agent shall have the right with Agent's consent and in Agent's sole discretion (but shall have no obligation) to purchase from any Non-Funding Lender, and each Non-Funding Lender agrees that it shall, at Agent's request, sell and assign to Agent or such person, all of the Applicable Commitments and all of the outstanding Credit Extensions of that Non-Funding Lender for an amount equal to the principal balance of the Credit Extensions held by such Non-Funding Lender and all accrued interest and fees with respect thereto through the date of sale, such purchase and sale to be consummated pursuant to an executed assignment agreement reasonably acceptable to Agent.

(b) Each Lender shall promptly remit to the other Lenders such sums as may be necessary to ensure the ratable repayment of each Lender's portion of any Credit Extension and the ratable distribution of interest, fees and reimbursements paid or made by any Credit Party. Notwithstanding the foregoing, if this Agreement requires payments of principal and interest to be made directly to the Lenders, a Lender receiving a scheduled payment shall not be responsible for determining whether the other Lenders also received their scheduled payment on such date; *provided*, *however*, if it is determined that a Lender received more than its ratable share of scheduled payments made on any date or dates, then such Lender shall remit to the Agent (for Agent to redistribute to itself and the Lenders in a manner to ensure the payment to Agent of any sums due Agent hereunder and the ratable repayment of each Lender's portion of any Credit Extension and the ratable distribution of interest, fees and reimbursements) such sums as may be necessary to ensure the ratable payment of such scheduled payments, as instructed by Agent. If any payment or distribution of any kind or character, whether in cash, properties or securities and whether voluntary, involuntary, through the exercise of any right of set-off, or otherwise, shall be received by a Lender in excess of its ratable share, then (i) the portion of such payment or distribution in excess of such Lender's ratable share shall be received by such Lender in trust for application to the payments of amounts due on the other Lender's claims, or, in the case of Collateral, shall hold such Collateral for itself and as agent and bailee for the Agent and other Lenders and (ii) such Lender shall promptly advise the Agent of the receipt of such payment, and, within five (5) Business Days of such receipt and, in the case of payments and distributions, such Lender shall purchase (for cash at face value) from the other Lenders (through the Agent), without recourse, such participations in the Credit Extension made by the other Lenders as shall be necessary to cause such purchasing Lender to share the excess payment ratably with each of them in accordance with the respective Pro Rata Shares of the Lenders; *provided*, *however*, that if all or any portion of such excess payment is thereafter recovered by or on behalf of a Credit Party from such purchasing Lender, the purchase shall be rescinded and the purchase price restored to the extent of such recovery, but without interest; *provided*, *further*, that the provisions of this **Section 14.13(b)** shall not be construed to apply to (x) any payment made by a Credit Party pursuant to and in accordance with the express terms of this Agreement or the other Financing Documents, or (y) any payment obtained by a Lender as consideration for the assignment of or sale of a participation in any of its Applicable Commitment pursuant to **Section 13.1**. Borrower agrees that any Lender so purchasing a participation from another Lender pursuant to this **Section 14.13(b)** may exercise all its rights of payment (including the right of set-off) with respect to such participation as fully as if such Lender were the direct creditor of the Borrower in the amount of such participation. No documentation other than notices and the like shall be required to implement the terms of this **Section 14.13(b)**. The Agent shall keep records (which shall be conclusive and binding in the absence of manifest error) of participations purchased pursuant to this **Section 14.13(b)** and shall in each case notify the Lenders following any such purchases.

15 DEFINITIONS

In addition to any terms defined elsewhere in this Agreement, or in any schedule or exhibit attached hereto, as used in this Agreement, the following terms have the following meanings:

"**Access Agreement**" means a landlord consent, bailee letter or warehouseman's letter, in form and substance reasonably satisfactory to Agent, in favor of Agent executed by such landlord, bailee or warehouseman, as applicable, for any third party location.

"**Account**" means any "account", as defined in the Code, with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to Borrower.

"**Account Debtor**" means any "account debtor", as defined in the Code, with such additions to such term as may hereafter be made.

"**Affiliate**" means, with respect to any Person, a Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person's senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person's managers and members.

"**Agent**" means, MidCap, not in its individual capacity, but solely in its capacity as agent on behalf of and for the benefit of the Lenders, together with its successors and assigns.

"**Agreement**" has the meaning given it in the preamble of this Agreement.

"**Anti-Terrorism Laws**" means any Laws relating to terrorism or money laundering, including Executive Order No. 13224 (effective September 24, 2001), the USA PATRIOT Act, the Laws comprising or implementing the Bank Secrecy Act, and the Laws administered by OFAC.

"**Applicable Commitment**" has the meaning given it in **Section 2.2**.

"Applicable Interest Rate" for each Credit Facility has the meaning specified for that Credit Facility in the **Credit Facility Schedule**.

"**Applicable Prepayment Fee**", for each Credit Facility, has the meaning given it in the **Credit Facility Schedule** for such Credit Facility.

"**Approved Fund**" means any (a) investment company, fund, trust, securitization vehicle or conduit that is (or will be) engaged in making, purchasing, holding or otherwise investing in commercial loans and similar extensions of credit in the Ordinary Course of Business, or (b) any Person (other than a natural person) which temporarily warehouses loans for any Lender or any entity described in the preceding clause (a) and that, with respect to each of the preceding clauses (a) and (b), is administered or managed by (i) a Lender, (ii) an Affiliate of a Lender or (iii) a Person (other than a natural person) or an Affiliate of a Person (other than a natural person) that administers or manages a Lender.

"**Blocked Person**" means: (a) any Person listed in the annex to, or is otherwise subject to the provisions of, Executive Order No. 13224, (b) a Person owned or controlled by, or acting for or on behalf of, any Person that is listed in the annex to, or is otherwise subject to the provisions of, Executive Order No. 13224, (c) a Person with which any Lender is prohibited from dealing or otherwise engaging in any transaction by any Anti-Terrorism Law, (d) a Person that commits, threatens or conspires to commit or supports "terrorism" as defined in Executive Order No. 13224, or (e) a Person that is named a "specially designated national" or "blocked person" on the most current list published by OFAC or other similar list.

"**Borrower**" mean the entity(ies) described in the first paragraph of this Agreement and each of their successors and permitted assigns. The term "each Borrower" shall refer to each Person comprising the Borrower if there is more than one such Person, or the sole Borrower if there is only one such Person. The term "any Borrower" shall refer to any Person comprising the Borrower if there is more than one such Person, or the sole Borrower if there is only one such Person.

"**Borrowing Resolutions**" means, with respect to any Person, those resolutions, in form and substance satisfactory to Agent, adopted by such Person's board of directors or other appropriate governing body and delivered by such Person to Agent approving the Financing Documents to which such Person is a party and the transactions contemplated thereby, as well as any other approvals as may be necessary or desired to approve the entering into the Financing Documents or the consummation of the transactions contemplated thereby or in connection therewith.

"**Bona Fide Preferred Equity Transaction**" means a bona fide equity financing, conducted with the principal purpose of raising capital, which new equity shares issued in connection with such equity financing, for the avoidance of doubt, (i) would not constitute Indebtedness, (ii) would not be subject to repurchase or redemption earlier than ninety-one (91) days after the indefeasible payment in full in cash of all Obligations (except, in the case of Catabasis Pharmaceuticals, Inc., in connection with customary liquidation preference rights consistent with Section 2.3.2(b) of Catabasis Pharmaceuticals, Inc.'s Second Amended and Restated Certificate of Incorporation as in effect on the Closing Date), (iii) does not result in changes to the Borrower's Operating Documents that could reasonably be expected to materially and adversely affect the rights of the Agent and/or Lenders hereunder and (iv) so long as the issuance of such shares would not cause a Change in Control.

"**Books**" means all of books and records of a Person, including ledgers, federal and state tax returns, records regarding the Person's assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

"**Business Day**" means any day that is not (a) a Saturday or Sunday or (b) a day on which Agent is closed.

"**Cash/Debt Ratio**" means the ratio of cash plus cash equivalents of Borrower, in each case on deposit in a Collateral Account subject to a Control Agreement, divided by the total consolidated outstanding Indebtedness of the Borrower and its Subsidiaries.

"**Change in Control**" means any event, transaction, or occurrence as a result of which (a) Preferred Investors cease to own and control all of the economic and voting rights associated with ownership of at least fifty-one percent (51%) (or such greater percentage as may be required under the organizational documents to constitute control) of the outstanding securities of all classes of the Borrower on a fully diluted basis (other than by the sale of Borrower's equity securities in or following an initial public offering; *provided that* upon the sale of Borrower's equity securities in an initial public offering, a Change in Control under this clause (a) shall occur when any "person" (as such term is defined in Sections 3(a)(9) and 13(d)(3) of the Exchange Act), other than a trustee or other fiduciary holding securities under an employee benefit plan of Borrower, is or becomes a beneficial owner (within the meaning Rule 13d-3 promulgated under the Exchange Act), directly or indirectly, of securities of Borrower, representing thirty-five percent (35%) or more of the combined voting power of Borrower's then outstanding securities); (b) during any period of twelve consecutive calendar months, individuals who at the beginning of such period constituted the board of directors or managers of Borrower (together with any new directors or managers whose election by the board of directors or managers of Borrower was approved by a vote of a majority of the directors then still in office who either were directors at the beginning of such period or whose election or nomination for election was previously so approved) cease for any reason other than death or disability to constitute a majority of the directors then in office; (c) the occurrence of any "change in control" or any term or provisions of similar effect under any Subordinated Debt Document or Borrower's Operating Documents; (d) Borrower ceases to own and control, directly or indirectly, all of the economic and voting rights associated with the outstanding voting capital stock (or other voting equity interest) of each of its Subsidiaries; or (e) any of the chief executive officer or the chief scientific officer of Borrower as of the date hereof shall cease to be involved in the day to day operations (including research and development) or management of the business of Borrower, and (i) an interim successor of such officer reasonably acceptable to Agent is not appointed within 30 days of such cessation or involvement and (ii) a permanent successor of such officer reasonably acceptable to Agent is not appointed within 120 days of such cessation or involvement.

"**Closing Date**" has the meaning given it in the preamble of this Agreement.

"**Code**" means the Uniform Commercial Code in effect on the date hereof, as the same may, from time to time, be enacted and in effect in the State of Maryland; *provided, however*, that to the extent that the Code is used to define any term herein or in any Financing Document and such term is defined differently in different Articles or Divisions of the Code, the definition of such term contained in Article or Division 9 shall govern; and *provided, further*, that in the event that, by reason of mandatory provisions of Law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Agent's

Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of Maryland the term "**Code**" shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

"**Collateral**" means all property, now existing or hereafter acquired, mortgaged or pledged to, or purported to be subjected to a Lien in favor of, Agent, for the benefit of Agent and Lenders, pursuant to this Agreement and the other Financing Documents, including, without limitation, all of the property described in **Exhibit A** hereto.

"**Collateral Account**" means any Deposit Account, Securities Account or Commodity Account.

"**Commitment Commencement Date**" has the meaning given it in the **Credit Facility Schedule**.

"**Commitment Termination Date**" has the meaning given it in the **Credit Facility Schedule**.

"**Commodity Account**" means any "commodity account", as defined in the Code, with such additions to such term as may hereafter be made.

"**Communication**" has the meaning given it in **Article 11**.

"**Compliance Certificate**" means a certificate, duly executed by an authorized officer of Borrower, appropriately completed and substantially in the form of **Exhibit B**.

"**Contingent Obligation**" means, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another Person such as an obligation directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; but "Contingent Obligation" does not include endorsements in the Ordinary Course of Business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

"**Control Agreement**" means any control agreement, each of which shall be in form and substance reasonably satisfactory to Agent, entered into among the depository institution at which Borrower maintains a Deposit Account or the securities intermediary or commodity intermediary at which Borrower maintains a Securities Account or a Commodity Account, Borrower, and Agent pursuant to which Agent obtains control (within the meaning of the Code) for the benefit of the Lenders over such Deposit Account, Securities Account or Commodity Account. As of the Closing Date and for so long as no Default or Event of Default has occurred, Agent and Lenders agree that any Control Agreement required hereunder shall permit Borrower to withdraw funds and issue instructions so long as the Agent has not issued a notice of exclusive control or similar instruction to the applicable depository or intermediary.

"**Credit Extension**" means an advance or disbursement of proceeds to or for the account of Borrower in respect of a Credit Facility.

"**Credit Extension Form**" means that certain form attached hereto as **Exhibit C**, as the same may be from time to time revised by Agent.

"**Credit Facility**" means a credit facility specified on the **Credit Facility Schedule**.

"**Credit Party**" means any Borrower, any Guarantor under a guarantee of the Obligations or any part thereof, and any other Person (other than Agent, a Lender or a participant of a Lender), whether now existing or hereafter acquired or formed, that becomes obligated as a borrower, guarantor, pledgor or other obligor under any Financing Document, and any

Person whose equity interests or portion thereof have been pledged or hypothecated to Agent under any Financing Document; and "**Credit Parties**" means all such Persons, collectively.

"**Default**" means any fact, event or circumstance which with notice or passage of time or both, could constitute an Event of Default.

"**Default Rate**" has the meaning given it in **Section 2.6(b)**.

"**Deposit Account**" means any "deposit account" as defined in the Code with such additions to such term as may hereafter be made.

"**Designated Funding Account**" is Borrower's Deposit Account, account number 7038067, maintained with Square 1 Bank and over which Agent has been granted control for the ratable benefit of all Lenders.

"**Designated SVB Deposit Account**" means the Borrower's Deposit Account numbered XXXX621857 located at Silicon Valley Bank.

"**Designated SVB Securities Account**" means the Borrower's Securities Account numbered XXX-X5982-10 located at Silicon Valley Bank.

"**Dollars**," "**dollars**" and "**$**" each means lawful money of the United States.

"**Draw Period**" means, for each Credit Facility, the period commencing on the Commitment Commencement Date and ending on the Commitment Termination Date.

"**Eligible Assignee**" means (a) a Lender, (b) an Affiliate of a Lender, (c) an Approved Fund, and (d) any other Person (other than a natural person) approved by Agent; *provided*, *however*, that notwithstanding the foregoing, "Eligible Assignee" shall not include any Credit Party or any Subsidiary of a Credit

Party. Notwithstanding the foregoing, in connection with assignments by a Lender due to a forced divestiture at the request of any regulatory agency, the restrictions set forth herein shall not apply and Eligible Assignee shall mean any Person or party becoming an assignee incident to such forced divestiture.

"**Environmental Law**" means all any law (statutory or common), ordinance, treaty, rule, regulation, order, policy, other legal requirement or determination of an arbitrator or of a Governmental Authority and/or Required Permits imposing liability or standards of conduct for or relating to the regulation and protection of human health, safety, the workplace, the environment and natural resources, and including public notification requirements and environmental transfer of ownership, notification or approval statutes.

"**Equipment**" means all "equipment", as defined in the Code, with such additions to such term as may hereafter be made, and includes without limitation all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

"**ERISA**" means the Employee Retirement Income Security Act of 1974, and all regulations promulgated thereunder.

"**Event of Default**" has the meaning given it in **Section 10.1**.

"**Exigent Circumstance**" has the meaning given it in **Section 13.14**.

"**FATCA**" means (a) Sections 1471 through 1474 of the Internal Revenue Code, as of the date of this Agreement (or any amended or successor version that is substantively comparable and not materially more onerous to comply with), any current or future regulations or official interpretations thereof and any agreements entered into pursuant to Section 1471(b)(1) of the Code, (b) any treaty, law, regulation or other official guidance enacted in any jurisdiction, or relating to an intergovernmental agreement between the United States and any other jurisdiction, with the purpose (in either case) of

facilitating the implementation of clause (a), or (c) any agreement pursuant to the implementation of clauses (a) or (b) with the United States Internal Revenue Service, the United States government, or any governmental or taxation authority.

"**Federal Funds Rate**" means, for any day, the rate per annum equal to the weighted average of the rates on overnight Federal funds transactions with members of the Federal Reserve System arranged by Federal funds brokers on such day, as published by the Federal Reserve Bank of New York on the Business Day next succeeding such day, *provided* that if no such rate is so published on such next succeeding Business Day, the Federal Funds Rate for such day shall be the average rate quoted to Agent on such day on such transactions as determined by Agent in a commercially reasonable manner.

"**Fee Letters**" means, collectively, the fee letter agreements among Borrower and Agent and Borrower and each Lender.

"**Financing Documents**" means, collectively, this Agreement, the Perfection Certificate, the Fee Letter(s), each note and guarantee executed by one or more Credit Parties in connection with the indebtedness governed by this Agreement, and each other present or future agreement executed by one or more Credit Parties and, or for the benefit of, the Lenders and/or Agent in connection with this Agreement, all as amended, restated, or otherwise modified from time to time.

"**Foreign Lender**" has the meaning given it in **Section 2.6(h)(iii)**.

"**Funding Date**" means any date on which a Credit Extension is made to or on account of Borrower which shall be a Business Day.

"**GAAP**" means generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession in the United States, which are applicable to the circumstances as of the date of determination.

"**General Intangibles**" means all "general intangibles", as defined in the Code, with such additions to such term as may hereafter be made, and includes without limitation, all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work, whether published or unpublished, any patents, trademarks, service marks and, to the extent permitted under applicable Law, any applications therefor, whether registered or not, any trade secret rights, including any rights to unpatented inventions, payment intangibles, royalties, contract rights, goodwill, franchise agreements, purchase orders, customer lists, route lists, telephone numbers, domain names, claims, income and other tax refunds, security and other deposits, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort or otherwise), insurance policies (including, without limitation, key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

"**Governmental Authority**" means any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

"**Guarantor**" means any present or future guarantor of the Obligations.

"**Hazardous Materials**" means petroleum and petroleum products and compounds containing them, including gasoline, diesel fuel and oil; explosives, flammable materials; radioactive materials; polychlorinated biphenyls and compounds containing them; lead and lead-based paint; asbestos or asbestos-containing materials; underground or above-ground storage tanks, whether empty or containing any substance; any substance the presence of which is prohibited by any Laws; toxic mold, any substance that requires special handling; and any other material or substance now or in the future defined as a "hazardous substance," "hazardous material," "hazardous waste," "toxic substance," "toxic pollutant," "contaminant," "pollutant" or other words of similar import within the meaning of any Environmental Law, including: (a) any "hazardous substance" defined as such in (or for purposes of) CERCLA, or any so-called "superfund" or "superlien" Law, including the judicial interpretation thereof; (b) any "pollutant or contaminant" as defined in 42 U.S.C.A. § 9601(33);

(c) any material now defined as "hazardous waste" pursuant to 40 C.F.R. Part 260; (d) any petroleum or petroleum by-products, including crude oil or any fraction thereof; (e) natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel; (f) any "hazardous chemical" as defined pursuant to 29 C.F.R. Part 1910; (g) any toxic or harmful substances, wastes, materials, pollutants or contaminants (including, without limitation, asbestos, polychlorinated biphenyls

("PCB's"), flammable explosives, radioactive materials, infectious substances, materials containing lead-based paint or raw materials which include hazardous constituents); and (h) any other toxic substance or contaminant that is subject to any Environmental Laws or other past or present requirement of any Governmental Authority.

"**Hazardous Materials Contamination**" means contamination (whether now existing or hereafter occurring) of the improvements, buildings, facilities, personalty, soil, groundwater, air or other elements on or of the relevant property by Hazardous Materials, or any derivatives thereof, or on or of any other property as a result of Hazardous Materials, or any derivatives thereof, generated on, emanating from or disposed of in connection with the relevant property.

"**Indebtedness**" means (a) indebtedness for borrowed money (including the Obligations) or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit, (b) obligations evidenced by notes, bonds, debentures or similar instruments, (c) lease obligations required to be capitalized for financial reporting purposes in accordance with GAAP (as in effect on the Closing Date), (d) non- contingent obligations of such Person to reimburse any bank or other Person in respect of amounts paid under a letter of credit, banker's acceptance or similar instrument, (e) equity securities of such Person subject to repurchase or redemption (other than (i) at the sole option of such Person, or (ii) in the case of Catabasis Pharmaceuticals, Inc., in connection with customary liquidation preference rights consistent with Section 2.3.2(b) of Catabasis Pharmaceuticals, Inc.'s Second Amended and Restated Certificate of Incorporation as in effect on the Closing Date), (f) obligations secured by a Lien on any asset of such Person, whether or not such obligation is otherwise an obligation of such Person, (g) "earnouts" owed by such Person, profit sharing arrangements, deferred purchase money amounts and similar payment obligations, (h) all Indebtedness of others guaranteed by such Person, (i) off-balance sheet liabilities and/or pension plan or multiemployer plan liabilities of such Person, (j) monetary obligations owed by such Person arising under non-compete agreements, (k) obligations arising under bonus, deferred compensation, incentive compensation or similar arrangements, other than those arising in the Ordinary Course of Business, and (l) Contingent Obligations.

"**Indemnified Liabilities**" means those liabilities described in **Section 13.2(a)** and **(b)**.

"**Indemnitee**" has the meaning given it in **Section 13.2**.

"**Insolvency Proceeding**" means any proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency Law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

"**Intellectual Property**" includes without limitation, all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work, whether published or unpublished, any patents, patent applications and like protections, including improvements, divisions, continuations, renewals, reissues, extensions, and continuations-in-part of the same, trademarks, trade names, service marks, mask works, rights of use of any name, domain names, or any other similar rights, any applications therefor, whether registered or not, know-how, operating manuals, trade secret rights, clinical and non-clinical data, rights to unpatented inventions, and any claims for damage by way of any past, present, or future infringement of any of the foregoing.

"**Inventory**" means all "inventory", as defined in the Code, with such additions to such term as may hereafter be made, and includes without limitation all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products, including without limitation such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returned goods and any documents of title representing any of the above.

"**Investment**" means, with respect to any Person, directly or indirectly, (a) to purchase or acquire any stock or stock equivalents, or any obligations or other securities of, or any interest in, any Person, including the establishment or creation of a Subsidiary, (b) to make or commit to make (unless such commitment provides, as a condition precedent to the consummation of such acquisition, for either (X) the indefeasible payment in full in cash of all Obligations or (Y) the consent of Agent and Required Lenders) any acquisition (including through licensing) of (i) all or substantially all of the assets of

another Person, or (ii) any business, Product, business line or product line, division or other unit operation of any Person, or (c) make or purchase any advance, loan, extension of credit or capital contribution to, or any other investment in, any Person.

"**Joinder Requirements**" has the meaning set forth in **Section 6.8**.

"**Laws**" means any and all federal, state, provincial, territorial, local and foreign statutes, laws, judicial decisions, regulations, guidance, guidelines, ordinances, rules, judgments, orders, decrees, codes, plans, injunctions, permits, concessions, grants, franchises, governmental agreements and governmental restrictions, whether now or hereafter in effect, which are applicable to any Credit Party in any particular circumstance.

"LC Collateral Account" means that certain Deposit Account ending in 755427 maintained at Silicon Valley Bank which serves as cash collateral supporting the Lease Letter of Credit, wherein the amount on deposit in such Deposit Account shall not exceed the lesser of (i) $125,000 and (ii) the face amount of the Lease Letter of Credit, so long as such account serves such purpose, together with any replacement Deposit Account meeting the same conditions and serving the same purpose.

"**Lease Letter of Credit**" means that certain letter of credit numbered SVBSF006548 issued by Silicon Valley Bank in the face amount of $113,000 obtained for the sole purpose of securing operating lease obligations incurred in the Ordinary Course of Business in respect of Borrower's leased facilities, including any extension, renewal or replacement of such letter of credit with a bank reasonably acceptable to Agent, so long as the face amount thereof does not exceed $125,000.

"**Lender**" means any one of the Lenders.

"**Lenders**" means the Persons identified on the **Credit Facility Schedule** as amended from time to time to reflect assignments made in accordance with this Agreement.

"**Lien**" means a claim, mortgage, deed of trust, lien, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of Law or otherwise against any property.

"**Margin Stock**" means "margin stock" as such term is defined in Regulation T, U, or X of the Board of Governors of the Federal Reserve System.

"**Material Adverse Change**" means (a) a material impairment in the perfection or priority of the Agent's Lien (or any Lender's Lien therein to the extent provided for in the Financing Documents) in the Collateral; (b) a material impairment in the value of the Collateral; (c) a material adverse change in the business,

operations, or condition (financial or otherwise) of the Borrower and its Subsidiaries that are Guarantors taken as whole; or (d) a material impairment of the prospect of repayment of any portion of the Obligations.

"**Material Agreement**" means (a) the agreements listed in the **Disclosure Schedule,** (b) each agreement or contract to which a Credit Party is a party relating to Material Intangible Property or development of Products or Intellectual Property, and (c) any agreement or contract to which such Credit Party or its Subsidiaries is a party the termination of which could reasonably be expected to result in a Material Adverse Change.

"**Material Indebtedness**" has the meaning given it in **Section 10.1**.

"**Maturity Date**" means October 1, 2018.

"**Maximum Lawful Rate**" has the meaning given it in **Section 2.6(g)**.

"**MidCap**" has the meaning given it in the preamble of this Agreement.

"**MidCap Obligations**" means any Credit Extensions made pursuant to MidCap's Applicable Commitments as of the Closing Date, and any other Obligations owing in respect thereof.

"**Obligations**" means all of Borrower's obligations to pay when due any debts, principal, interest, Protective Advances, fees, indemnities and other amounts Borrower owes the Agent or Lenders now or later, under this Agreement or the other Financing Documents, including, without limitation, interest accruing after Insolvency Proceedings begin (whether or not allowed) and debts, liabilities, or obligations of Borrower assigned to the Lenders and/or Agent, and the payment and performance of each other Credit Party's covenants and obligations under the Financing Documents. "Obligations" does not include obligations under any warrants issued to Agent or a Lender.

"**OFAC**" means the U.S. Department of Treasury Office of Foreign Assets Control.

"**OFAC Lists**" means, collectively, the Specially Designated Nationals and Blocked Persons List maintained by OFAC pursuant to Executive Order No. 13224, 66 Fed. Reg. 49079 (Sept. 25, 2001) and/or any other list of terrorists or other restricted Persons maintained pursuant to any of the rules and regulations of OFAC or pursuant to any other applicable Executive Orders.

"**Operating Documents**" means, for any Person, such Person's formation documents, as certified with the Secretary of State of such Person's state of formation on a date that is no earlier than thirty (30) days prior to the Closing Date, and (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments or modifications thereto.

"**Ordinary Course of Business**" means, in respect of any transaction involving any Credit Party, the ordinary course of business of such Credit Party, as conducted by such Credit Party in accordance with past practices, which shall in any event be on terms no less favorable than would have been obtained in an arms-length transaction.

"**Payment Date**" means the first calendar day of each calendar month.

"**Perfection Certificate**" means the Perfection Certificate delivered to Agent as of the Closing Date, together with any amendments thereto required under this Agreement.

"**Permitted Contingent Obligations**" means (a) Contingent Obligations resulting from endorsements for collection or deposit in the Ordinary Course of Business; (b) Contingent Obligations incurred in the Ordinary Course of Business with respect to surety and appeal bonds, performance bonds and other similar obligations not to exceed One Hundred Thousand Dollars ($100,000) in the aggregate at any time outstanding; (c) Contingent Obligations arising under indemnity agreements with title insurers; (d) Contingent Obligations arising with respect to customary indemnification obligations in favor of purchasers in connection with dispositions of personal property assets permitted under **Article 7**; (e) so long as there exists no Event of Default both immediately before and immediately after giving effect to any such transaction, Contingent Obligations existing or arising under any swap contract, *provided*, *however*, that such obligations are (or were) entered into by Borrower or an Affiliate in the Ordinary Course of Business for the purpose of directly mitigating risks associated with liabilities, commitments, investments, assets, or property held or reasonably anticipated by such Person and not for purposes of speculation; and (f) other Contingent Obligations not permitted by clauses (a) through (e) above, not to exceed $100,000 in the aggregate at any time outstanding.

"**Permitted Indebtedness**" means: (a) Borrower's Indebtedness to the Lenders and Agent under this Agreement and the other Financing Documents; (b) Indebtedness existing on the Closing Date and described on the **Disclosure Schedule**; (c) Indebtedness secured by Permitted Liens; (d) Subordinated Debt; (e) unsecured Indebtedness to trade creditors incurred in the Ordinary Course of Business; (f) Permitted Contingent Obligations; (g) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness under clauses (b) and (c) above, *provided*, *however*, that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon the obligors thereunder; (h) Indebtedness consisting of intercompany loans and advances made by any Credit Party to any other Credit Party, provided that (1) the obligations of the Credit Parties under such intercompany loan shall be subordinated at all times to the Obligations of the Credit Parties hereunder or under the other Financing Documents in a manner reasonably satisfactory to Agent and (2) to the extent that such Indebtedness is evidenced by a promissory note or other written instrument, Borrower shall pledge and deliver to Agent, for the benefit of itself and the Lenders, any applicable original promissory note or instrument, as applicable, along with an endorsement in blank in form and substance satisfactory to Agent; and (i) unsecured Indebtedness in respect of Borrower's credit card obligations in an aggregate amount outstanding not to exceed, and subject to a maximum credit limit of, $100,000.

"**Permitted Investments**" means: (a) Investments existing on the Closing Date and described on the **Disclosure Schedule**; (b) Investments consisting of cash equivalents; (c) any Investments in liquid assets permitted by Borrower's investment policy, as amended from time to time, provided that such investment policy (and any such amendment thereto) has been approved in writing by Agent (provided, that, under no circumstances shall Borrower be permitted to invest in or hold Margin Stock); (d) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary

course of any Credit Party; (e) Investments consisting of deposit accounts or securities accounts in which the Agent has a first priority perfected security interest except as otherwise provided by **Section 6.6**; (f) Investments in Subsidiaries solely to the extent permitted pursuant to **Section 6.8**; (g) Investments consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the Ordinary Course of Business, and (ii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans or agreements approved by Borrower's board of directors; (h) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the Ordinary Course of Business; and (i) Investments consisting of intercompany Indebtedness in accordance with and to the extent permitted by clause (h) of the definition of "Permitted Indebtedness".

"**Permitted Liens**" means: (a) Liens existing on the Closing Date and shown on the **Disclosure Schedule** or arising under this Agreement and the other Financing Documents; (b) purchase money Liens or capital leases securing no more than (i) One Hundred Thousand Dollars ($100,000) in the aggregate principal amount outstanding prior to a Qualifying IPO and (ii) Five Hundred Thousand Dollars ($500,000) in the aggregate principal amount outstanding following a Qualifying IPO, in each case (x) on Equipment acquired or held by a Credit Party incurred for financing the acquisition of the Equipment, or (y) existing on Equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the sale of such Equipment; (c) Liens for taxes, fees, assessments or other government charges or levies, either not delinquent or being contested in good faith and for which adequate reserves are maintained on the Books of the Credit Party against whose asset such Lien exists, *provided* that no notice of any such Lien has been filed or recorded under the Internal Revenue Code, and the treasury regulations adopted thereunder; (d) statutory Liens securing claims or demands of materialmen, mechanics, carriers, warehousemen, landlords and other Persons imposed without action of such parties, *provided* that they have no priority over any of Agent's Lien and the aggregate amount of such Liens for all Credit Parties does not any time exceed One Hundred Thousand Dollars ($100,000); (e) leases or subleases of real property granted in the Ordinary Course of Business, and leases, subleases, non-exclusive licenses or sublicenses of property (other than real property or Intellectual Property) granted in the Ordinary Course of Business, if the leases, subleases, licenses and sublicenses do not prohibit granting Agent a security interest; (f) banker's liens, rights of set-off and Liens in favor of financial institutions incurred made in the Ordinary Course of Business arising in connection with a Credit Party's Collateral Accounts provided that such Collateral Accounts are subject to a Control Agreement to the extent required hereunder; (g) Liens to secure payment of workers' compensation, employment insurance, old-age pensions, social security and other like obligations incurred in the Ordinary Course of Business (other than Liens imposed by ERISA); (h) Liens arising from judgments, decrees or attachments in circumstances not constituting an Event of Default; (i) easements, reservations, rights-of-way, restrictions, minor defects or irregularities in title and similar charges or encumbrances affecting real property not constituting a Material Adverse Change; (j) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in (a) and (b) above, but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the Indebtedness may not increase; (k) Permitted Licenses; and (l) Liens solely in the form of the LC Collateral Account securing the Lease Letter of Credit.

"**Person**" means any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

"**Preferred Investors**" means the owners of preferred stock of the Borrower as of the Closing Date, together with any Affiliates or investment funds, in each case controlled by such Preferred Investor.

"**Pro Rata Share**" means, as determined by Agent, with respect to each Credit Facility and Lender holding an Applicable Commitment or Credit Extensions in respect of such Credit Facility, a percentage (expressed as a decimal, rounded to the ninth decimal place) determined by *dividing* (a) in the case of fully-funded Credit Facilities, the amount of Credit Extensions held by such Lender in such Credit Facility *by* the aggregate amount of all outstanding Credit Extensions for such Credit Facility, and (b) in the case of Credit Facilities that are not fully-funded, the amount of Credit Extensions and

unfunded Applicable Commitments held by such Lender in such Credit Facility *by* the aggregate amount of all outstanding Credit Extensions and unfunded Applicable Commitments for such Credit Facility.

"**Protective Advances**" means all audit fees and expenses, costs, and expenses (including reasonable attorneys' fees and expenses) of Agent and Lenders for preparing, amending, negotiating, administering, defending and enforcing the Financing Documents and the Warrants (including, without limitation, those incurred in connection with appeals or Insolvency Proceedings) or otherwise incurred by Agent or the Lenders in connection with the Financing Documents and the Warrants.

"**Register**" has the meaning given it in Section 13.1(d).

"**Registered Organization**" means any "registered organization" as defined in the Code, with such additions to such term as may hereafter be made.

"**Replacement Warrants — Tranche 1**" means, collectively, warrants to purchase the number of shares of Senior Preferred Stock equal to 3.0% of the amount advanced under Tranche 1, divided by the exercise price, which shall be equivalent to the price per share on the issuance date of such stock, each in form and substance satisfactory to Agent and Lenders.

"**Replacement Warrants — Tranche 2**" means, collectively, warrants to purchase the number of shares of Senior Preferred Stock equal to 3.0% of the amount drawn under Tranche 2, divided by the exercise price, which shall be equivalent to the price per share on the issuance date of such stock, each in form and substance satisfactory to Agent and Lenders.

"**Required Lenders**" means, unless all of the Lenders and Agent agree otherwise in writing, Lenders having (a) more than sixty percent (60%) of the Applicable Commitments of all Lenders, or (b) if such Applicable Commitments have expired or been terminated, more than sixty percent (60%) of the aggregate outstanding principal amount of the Credit Extensions; provided, however, that so long as a Lender on the Closing Date does not assign any portion of its Applicable Commitment and/or Credit Extensions (other than an assignment to any Affiliate of any Lender or an Approved Fund), the "Required Lenders" shall include such Lender.

"**Required Permit**" means all licenses, certificates, accreditations, product clearances or approvals, provider numbers or provider authorizations, supplier numbers, provider numbers, marketing authorizations, other authorizations, registrations, permits, consents and approvals of a Credit Party (a) issued or required under Laws applicable to the business of Borrower or any of its Subsidiaries or necessary in the manufacturing, importing, exporting, possession, ownership, warehousing, marketing, promoting, sale, labeling, furnishing, distribution or delivery of goods or services under Laws applicable to the business of Borrower or any of its Subsidiaries, or (b) issued by any Person from which Borrower or any of its Subsidiaries have received an accreditation. Without limiting the generality of the foregoing, "**Required Permits**" includes any Drug Application (including without limitation, at any point in time, all licenses, approvals and permits issued by the FDA or any other applicable Governmental Authority necessary for the testing, manufacture, marketing or sale of any Product by any applicable Borrower(s) as such activities are being conducted by such Borrower with respect to such Product at such time) and any drug listings and drug establishment

registrations under 21 U.S.C. Section 510, registrations issued by DEA under 21 U.S.C. Section 823 (if applicable to any Product), and those issued by State governments for the conduct of Borrower's or any Subsidiary's business.

"**Responsible Officer**" means any of the President and Chief Executive Officer or Chief Financial Officer of Borrower.

"**Schedule Update Compliance Certificate**" means each monthly Compliance Certificate required to be delivered pursuant to this Agreement for the months ending March 31, June 30, September 30 and December 31 of each year.

"**Secretary's Certificate**" means, with respect to any Person, a certificate, in form and substance satisfactory to Agent, executed by such Person's secretary or other appropriate officer acceptable to Agent on behalf of such Person certifying that (a) such Person has the authority to execute, deliver, and perform its obligations under each of the Financing Documents to which it is a party, (b) that attached as Exhibit A to such certificate is a true, correct, and complete copy of the Borrower Resolutions then in full force and effect authorizing and ratifying the execution, delivery, and performance by such

Person of the Financing Documents to which it is a party, (c) the name(s) of the Person(s) authorized to execute the Financing Documents on behalf of such Person, together with a sample of the true signature(s) of such Person(s), and (d) that Agent and the Lenders may conclusively rely on such certificate unless and until such Person shall have delivered to Agent a further certificate canceling or amending such prior certificate.

"**Secured Promissory Note**" has the meaning given it in **Section 2.7**.

"**Securities Account**" means any "securities account", as defined in the Code, with such additions to such term as may hereafter be made.

"**Senior Preferred Stock**" has the meaning given it in Section 6.15(a).

"**Square 1**" has the meaning given it in the preamble of this Agreement.

"**Square 1 Obligations**" means any Credit Extensions made pursuant to Square 1's Applicable Commitments as of the Closing Date, and any other Obligations owing in respect thereof.

"**Stated Rate**" has the meaning given it in **Section 2.6(g)**.

"**Subordinated Debt**" means indebtedness incurred by Borrower which shall be (a) in an amount satisfactory to Agent, (b) made pursuant to documents in form and substance satisfactory to Agent in its sole discretion (the "**Subordinated Debt Documents**"), and (c) subordinated to all of Borrower's now or hereafter indebtedness to the Agent and Lenders pursuant to a Subordination Agreement.

"**Subordination Agreement**" means a subordination, intercreditor, or other similar agreement in form and substance, and on terms, approved by Agent and the Required Lenders in writing. For the avoidance of doubt, any Required Lenders' approval may be provided by email to Agent, and Agent shall be authorized to enter into any such Subordination Agreement on behalf of the Lenders.

"**Subsidiary**" means, with respect to any Person, any Person of which more than fifty percent (50.0%) of the voting stock or other equity interests (in the case of Persons other than corporations) is owned or controlled, directly or indirectly, by such Person.

"**Taxes**" has the meaning given it in **Section 2.6(h)**.

"**Tranche 1**" means any Credit Extension described as "Credit Facility #1" and "Tranche 1" on the **Credit Facility Schedule**.

"**Tranche 2**" means any Credit Extension described as "Credit Facility #2" and "Tranche 2" on the **Credit Facility Schedule**.

"**Tranche 3**" means any Credit Extension described as "Credit Facility #3" and "Tranche 3" on the **Credit Facility Schedule.**

"**Transfer**" has the meaning given it in **Section 7.1**.

"**Warrants**" means, collectively, the Warrants — Tranche 1, Warrants — Tranche 2, Warrants — Tranche 3, Replacement Warrants — Tranche 1 and Replacement Warrants — Tranche 2.

"**Warrants — Tranche 1**" means, collectively, warrants, dated as of the date hereof, to purchase shares of Borrower's Series B Preferred Stock equal to 3.0% of the amount advanced under Tranche 1, divided by the exercise price of $0.9503 per share, each substantially in the form of **Exhibit E**, or, if applicable and required pursuant to this Agreement, the Replacement Warrants — Tranche 1.

"**Warrants — Tranche 2**" means, collectively, warrants to purchase shares of Borrower's (i) if Tranche 2 is advanced prior to Borrower's authorization and issuance of (or obligation to issue) Senior Preferred Stock and prior to a Qualifying IPO (as defined in the **Credit Facility Schedule**), Series B Preferred Stock equal to 3.0% of the amount advanced under Tranche 2 divided by the exercise price under such warrants, each in the form of **Exhibit E**, (ii) if Tranche 2 is advanced after Borrower's authorization and issuance of (or obligation to issue) Senior Preferred Stock but prior to a Qualifying IPO, Senior Preferred Stock equal to 3.0% of the amount advanced under Tranche 2 divided by the exercise price under such warrants, which shall be the price per share paid by purchasers of the Senior Preferred Stock, or (iii) if Tranche 2 is advanced as of or following a Qualifying IPO, Common Stock equal to 3.0% of the amount advanced under Tranche 2 divided by the exercise price under such warrants, which shall be the average closing share price, as reported on the securities exchange on which Borrower's Common Stock is traded, for the preceding 10-trading day period immediately prior to the Funding Date for Tranche 2, each substantially in the form of **Exhibit F** (other than with respect to the class or series), or, if applicable and required pursuant to this Agreement, the Replacement Warrants — Tranche 2.

"**Warrants — Tranche 3**" means, collectively, warrants to purchase shares of Borrower's Common Stock equal to 3.0% of the amount advanced under Tranche 3 divided by the exercise price under such warrants, which shall be the average closing share price, as reported on the securities exchange on which

Borrower's Common Stock is traded, for the preceding 10-trading day period immediately prior to the Funding Date for Tranche 3, each substantially in the form of **Exhibit F**.

[SIGNATURES APPEAR ON FOLLOWING PAGE(S)]

IN WITNESS WHEREOF, intending that this instrument constitute an instrument executed and delivered under seal, the parties hereto have caused this Agreement to be executed as of the Closing Date.

BORROWER:

CATABASIS PHARMACEUTICALS, INC.

By: /s/ Ian Sanderson (SEAL)

Name: Ian Sanderson
Title: Chief Financial Officer and Treasurer

AGENT:

MIDCAP FINANCIAL SBIC, LP,
as Agent for Lenders

By: Midcap Financial SBIC GP, LLC

By: /s/ Colleen S. Kovas (SEAL)
Name: Colleen S. Kovas
Title: Its Authorized Signatory

LENDERS:

MIDCAP FINANCIAL SBIC, LP,

By: Midcap Financial SBIC GP, LLC

By: /s/ Colleen S. Kovas (SEAL)
Name: Colleen S. Kovas
Title: Its Authorized Signatory

Notice Address:

MidCap Financial SBIC, LP
7255 Woodmont Avenue, Suite 200
Bethesda, Maryland 20814
Attention: Portfolio Management- Life Sciences
Fax: (301) 941-1450
E-Mail: lviera@midcapfinancial.com

LENDERS (continued):

SQUARE 1 BANK

By: /s/ Evan Travis (SEAL)
Name: Evan Travis
Title: Vice President

Notice Address:

Square 1 Bank
890 Winter Street, Suite 110
Waltham, MA 02451
Attn: David Kho, AVP
Telephone: (781) 547-0847
Email: dkho@square1bank.com

with a copy to:

Square 1 Bank
406 Blackwell Street, Suite 240
Durham, North Carolina 27701
Attention: Loan Operations Manager
Fax: (919) 314-3080

EXHIBITS AND SCHEDULES

EXHIBITS

Exhibit A	Collateral
Exhibit B	Form of Compliance Certificate
Exhibit C	Credit Extension Form
Exhibit E	Form of Warrant (Preferred)
Exhibit F	Form of Warrant (Common)

SCHEDULES

Credit Facility Schedule
Amortization Schedule (for each Credit Facility)
Post-Closing Obligations Schedule
Closing Deliveries Schedule
Disclosure Schedule
Intangible Property Schedule
Products Schedule
Required Permits Schedule

EXHIBIT A

COLLATERAL

The Collateral consists of all assets of Borrower, including all of Borrower's right, title and interest in and to the following personal property:

(a) all goods, Accounts (including health-care insurance receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles, commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, investment accounts, commodity accounts and other Collateral Accounts, all certificates of deposit, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and

(b) all Borrower's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

Notwithstanding the foregoing, except as provided below, the Collateral shall not include any Intellectual Property of any Credit Party, whether now owned or hereafter acquired, except to the extent that it is necessary under applicable law to have a Lien and security interest in any such Intellectual Property in order to have a perfected Lien and security interest in and to IP Proceeds (defined below), and for the avoidance of any doubt, the Collateral shall include, and Agent shall have a Lien and security interest in, (i) all IP Proceeds, and (ii) all payments with respect to IP Proceeds that are received after the commencement of a bankruptcy or insolvency proceeding. The term "**IP Proceeds**" means, collectively, all cash, Accounts, license and royalty fees, claims, products, awards, judgments, insurance claims, and other revenues, proceeds or income, arising out of, derived from or relating to any Intellectual Property of any Credit Party, and any claims for damage by way of any past, present or future infringement of any Intellectual Property of any Credit Party (including, without limitation, all cash, royalty fees, other proceeds, Accounts and General Intangibles that consist of rights of payment to or on behalf of a Credit Party and the proceeds from the sale, licensing or other disposition of all or any part of, or rights in, any Intellectual Property by or on behalf of a Credit Party).

Pursuant to the terms of a certain negative pledge arrangement with Agent and Lenders, Borrower has agreed not to encumber any of its Intellectual Property without Agent's and Lenders' prior written consent.

EXHIBIT B

COMPLIANCE CERTIFICATE

TO:	MidCap Financial SBIC, LP, as Agent
FROM:	Catabasis Pharmaceuticals, Inc.
DATE:	201

The undersigned authorized officer of Catabasis Pharmaceuticals, Inc., a Delaware corporation ("**Borrower**"), certifies that under the terms and conditions of the Credit and Security Agreement between Borrower, Agent and the Lenders (as amended, restated, supplemented, replaced or otherwise modified from time to time, the "**Agreement**"):

(1) Borrower is in complete compliance with all required covenants for the month ending , 201 , except as noted below;

(2) there are no Events of Default;

(3) all representations and warranties in the Agreement are true and correct in all material respects on this date except as noted below; *provided, however*, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and *provided, further,* that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date;

(4) Each of Borrower and the other Credit Parties has timely filed all required tax returns and reports, and has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed except as otherwise permitted pursuant to the terms of the Agreement; [and]

(5) no Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Agent. [; and]

[(6) attached hereto is an updated [Disclosure Schedule,][Required Permit Schedule,][Products Schedule][and][Intangible Assets Schedule] as required to be updated pursuant to the terms of the Credit and Security Agreement][TO BE INCLUDED ONLY FOR COMPLIANCE CERTIFICATES DELIVERED ON MONTHS ENDED MARCH 31, JUNE 31, SEPTEMBER 30 AND DECEMBER 31; AND TO INCLUDE ONLY THOSE SCHEDULES THAT REQUIRE UPDATING]

Attached are the required documents supporting the certifications set forth in this Compliance Certificate. The undersigned certifies, in his/her capacity as an officer of the Borrower, that these are prepared in accordance with GAAP consistently applied from one period to the next except as explained in an accompanying letter or footnotes. The undersigned acknowledges, in his/her capacity as an officer of Borrower, that no borrowings may be requested at any time or date of determination that Borrower is not in compliance with any of the terms of the Agreement, and that compliance is determined not just at the date this certificate is delivered. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Agreement.

Please indicate compliance status by circling Yes/No under "Complies" column.

Reporting Covenant	Required	Complies
Financial Statements	Monthly or Quarterly within 30 or 45 days - in each case if and as required by Section 6.2(a)	Yes No
Monthly Cash Summary	Monthly if and as required by Section 6.2(a)	Yes No
Audited Financial Statements	Annually within 180 days after FYE	Yes No
Board Approved Projections	Annually within 90 days after FYE	Yes No
Compliance Certificate	Monthly within 30 or 45 days as required by **Section 6.2(b))**	Yes No

The following are the exceptions with respect to the certification above: (If no exceptions exist, state "No exceptions to note.")

CATABASIS PHARMACEUTICALS, INC.

By: _____
Name: _____
Title: _____

AGENT USE ONLY

Received by: _____
AUTHORIZED SIGNER
Date: _____

Verified: _____
AUTHORIZED SIGNER
Date: _____

Compliance Status: Yes No

EXHIBIT C CREDIT EXTENSION FORM

DEADLINE IS NOON E.S.T.

Date: , 201

LOAN ADVANCE:

Complete *Outgoing Wire Request* section below if all or a portion of the funds from this loan advance are for an outgoing wire.

From Account # _____ To Account # _____
(Loan Account #) (Deposit Account #)

Amount of Advance $ _____

All Borrower's representations and warranties in the Credit and Security Agreement are true, correct and complete in all material respects on the date of the request for an advance; *provided, however*, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and *provided, further*, that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date:

Authorized Signature: _____ Phone Number: _____
Print Name/Title: _____

OUTGOING WIRE REQUEST:

Complete only if all or a portion of funds from the loan advance above is to be wired.

Beneficiary Name: _____
Amount of Wire: $ _____
Beneficiary Lender: _____
Account Number: _____

City and State: _____

Beneficiary Lender Transit (ABA) #: _____ Beneficiary Lender Code (Swift, Sort, Chip, etc.): ____
(For International Wire Only)
Intermediary Lender: _____ Transit (ABA) #: _____

For Further Credit to: _____
Special Instruction: _____

By signing below, I (we) acknowledge and agree that my (our) funds transfer request shall be processed in accordance with and subject to the terms and conditions set forth in the agreements(s) covering funds transfer service(s), which agreements(s) were previously received and executed by me.

Authorized Signature: _____ 2nd Signature (if required): _____
Print Name/Title: _____ Print Name/Title: _____
Telephone #: _____ Telephone #:

Exhibit E

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AND PURSUANT TO THE PROVISIONS OF ARTICLE 5 BELOW, MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND APPLICABLE STATE SECURITIES LAW, OR SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION CAN BE MADE IN COMPLIANCE WITH RULE 144 OF THE ACT, OR IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE REASONABLY SATISFACTORY TO THE ISSUER OF THESE SECURITIES, SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION IS EXEMPT FROM REGISTRATION.

WARRANT TO PURCHASE STOCK

Company:	CATABASIS PHARMACEUTICALS, INC., a Delaware corporation
Number of Shares:	(Subject to adjustment as hereinafter provided)
Class of Stock:	Series B Preferred Stock
Warrant Price:	$0.9503 per Share (Subject to adjustment as hereinafter provided)
Issue Date:	, 201
Expiration Date:	The earlier to occur of the (i) expiration of this Warrant pursuant to Article 1.6 hereof or (ii) 7th anniversary after the Issue Date
Credit Facility:	This Warrant is issued in connection with the Credit and Security Agreement, dated as of August 27, 2014, among the Company, Midcap Financial SBIC, LP, a Delaware limited partnership, and such other lenders from time to time party thereto, as amended, restated, supplemented or otherwise modified from time to time (the "Credit Agreement").

THIS WARRANT TO PURCHASE STOCK (this "Warrant") CERTIFIES THAT, for good and valuable consideration, including without limitation the mutual promises contained in the Credit Agreement (defined above), , a (together with any registered holder from time to time of this Warrant or any holder of the Shares issuable or issued upon exercise of this Warrant, "Holder") is entitled to purchase the number of fully paid and nonassessable shares of the class and series of capital stock of the Company at the Warrant Price, all as set forth above or herein below and as adjusted pursuant to the terms of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant. As used herein, "Share" or "Shares" shall refer to either (i) the shares of stock issuable upon the exercise or conversion of this Warrant and any shares of capital stock into which such shares may be converted or exchanged, or (ii) the authorized or issued and outstanding shares of capital stock of the Company which are of the same class and series as the shares of stock issuable upon the exercise or conversion of this Warrant, in either case as the specific provisions of this Warrant or the context may require.

ARTICLE 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering a duly completed and executed Notice of Exercise in substantially the form attached as Appendix 1 to the principal office of the Company. Unless Holder is exercising the conversion right set forth in Section 1.2, Holder shall also deliver to the Company a check, wire transfer (to an account designated by the Company), or other

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form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

1.2 Conversion Right. In lieu of exercising this Warrant as specified in Article 1.1, Holder may at any time and from time to time after the Issue Date convert this Warrant, in whole or in part, into a number of Shares determined by dividing (a) the aggregate fair market value of the number of Shares or the securities otherwise issuable upon exercise of this Warrant with respect to which Holder elects to convert this Warrant minus the aggregate Warrant Price of such Shares by (b) the fair market value of one Share. The "fair market value" of the Shares shall be determined pursuant to Section 1.3.

1.3 Fair Market Value. If the Company's common stock is traded in a public market and the Shares are common stock, the fair market value of each Share shall be the closing price of a Share reported for the business day immediately before Holder delivers its Notice of Exercise to the Company (or in the instance where the Warrant is exercised immediately prior to the effectiveness of the Company's initial public offering of its common stock ("IPO"), the "price to public" per share price specified in the final prospectus relating to such offering). If the Company's common stock is traded in a public market and the Shares are preferred stock, the fair market value of each Share shall be the closing price of such common stock reported for the business day immediately before Holder delivers its Notice of Exercise to the Company (or in the instance where the Warrant is exercised immediately prior to the effectiveness of an IPO, the initial "price to public" per share price specified in the final prospectus relating to the IPO), in either case, multiplied by the number of shares of the Company's common stock into which a Share is then convertible. In the event of an exercise in connection with an Acquisition, the fair market value of a Share shall be the value to be received per Share by all holders of such Shares in such transaction. If the Company's common stock is not traded in a public market and other than in the event of an exercise in connection with an Acquisition, the Board of Directors of the Company shall determine the fair market value in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Promptly after Holder exercises or converts this Warrant pursuant to Article 1.1 or 1.2, respectively, and, if applicable, the Company receives payment of the aggregate Warrant Price, the Company shall promptly deliver to Holder certificates for the Shares acquired and, if this Warrant has not been fully exercised or converted and has not expired, a new Warrant of like tenor representing the Shares not so acquired. This Warrant shall be deemed to have been exercised and such certificates deemed issued, and Holder shall become the holder of record of the Shares for all purposes, as of 5:00 p.m. (Eastern Time) on the date of Holder's delivery of the exercise notice pursuant to Article 1.1 and payment of the Warrant Price, if applicable. If an exercise or conversion is to be made in connection with an IPO or Acquisition, such exercise may at the election of Holder be conditioned upon the consummation of such transaction, in which case such exercise shall not be deemed to be effective until immediately prior to the consummation of such transaction.

1.5 Replacement of Warrants. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form and amount to the Company or, in the case of mutilation on surrender and cancellation of this Warrant, the Company shall execute and deliver, in lieu of this Warrant, a new warrant of like tenor.

1.6 Treatment of Warrant Upon Acquisition of the Company.

1.6.1 "Acquisition". For the purpose of this Warrant, "Acquisition" means (a) any sale, license, or other disposition, in each case, of all or substantially all of the assets of the Company, or (b) any reorganization, consolidation, share exchange or merger of the Company with or into another person or entity, or sale of outstanding securities of the Company by the holders thereof, in each case where the holders of the Company's securities before the transaction beneficially own less than fifty percent (50%) of the outstanding voting securities of the successor, acquiring or surviving person or entity after the transaction.

1.6.2 Treatment of Warrant Upon Acquisition.

A) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition that (i) is not described in Section 1.6.1(a), (ii) in which the sole consideration is cash, and (iii) in connection with or as a result of which all holders of the Shares are or have the right to receive solely cash in the same proportions in respect of all of their Shares, then either (a) Holder shall exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such Acquisition, or (b) if Holder elects not to exercise the Warrant, this Warrant will expire upon the consummation of such Acquisition, subject to Section 5.8. The Company shall provide Holder with written notice of its request relating to the foregoing (together with such reasonable information as Holder may reasonably request in connection with such contemplated Acquisition giving rise to such notice), which notice is to be delivered to Holder not less than ten (10) days prior to the closing of the proposed Acquisition.

B) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition that is described in Section 1.6.1(a) and is an "arms'-length" transaction with a third party that is not an Affiliate (as defined below) of the Company (a "True Asset Sale"), Holder may (a) exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such True Asset Sale, (b) permit this Warrant to continue until the earlier of the Expiration Date or the dissolution and/or liquidation of the Company following the closing of any such True Asset Sale, subject to Section 5.8, or (c) elect to have the terms of Section 1.6.2(D) below apply. The Company shall provide Holder with written notice of its request relating to the foregoing (together with such reasonable information as Holder may request in connection with such contemplated Acquisition giving rise to such notice), which notice is to be delivered to Holder not less than ten (10) days prior to the closing of the proposed True Asset Sale.

C) Upon the written request of the Company, Holder agrees that, in the event of an Acquisition (i) in which the consideration is a combination of cash and equity securities of the acquirer listed for trading on a U.S. national securities exchange and which may be freely resold pursuant to a resale registration statement or under Rule 144 of the Act without any restriction or limitation (including without limitation volume and manner of sale restrictions), (ii) in connection with or as a result of which all holders of the Shares are or have the right to receive solely cash and/or such securities in the same proportions in respect of all of their Shares, and (iii) on the record date for which the fair market value of one Share (or other securities issuable upon exercise of this Warrant) is greater than the Warrant Price, Holder may (a) exercise its conversion or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such Acquisition, or (b) if Holder elects not to exercise the Warrant, this Warrant will expire upon the consummation of such Acquisition, subject to Section 5.8.

D) Upon the closing of any Acquisition other than those particularly described in subsections (A), (B) and (C) above (or in the case of an Acquisition described in Section 1.6.2(B) above if Holder elects to have the terms of this Section 1.6.2(D) apply), the successor, surviving or acquiring entity shall assume in writing the obligations of this Warrant, including agreements to deliver to Holder in exchange for this Warrant a written instrument issued by the successor, surviving or acquiring entity pursuant to which this Warrant shall thereafter be exercisable for the kind, amount and value of securities, cash, and property as would have been payable for the Shares issuable upon exercise of the unexercised portion of this Warrant had such Shares been outstanding on the record date for the Acquisition and subsequent closing. The Warrant Price and/or number of Shares shall be adjusted accordingly.

E) Conditional Exercise. Notwithstanding any other provision hereof, if an exercise of this Warrant is to be made in connection with an Acquisition, such exercise may at the election of Holder be conditioned upon the consummation of such transaction, in which case such exercise shall not be deemed to be effective until immediately prior to the consummation of such transaction.

As used herein "Affiliate" shall mean any person or entity that controls, is controlled by or is under common control with any such person or entity, and each of such person's or entity's officers, directors, members, managers, joint venturers or partners, as applicable (whether as a result of the ownership of voting securities, by contract or otherwise).

1.7 [Omitted]

1.8 Replacement Warrants. Holder shall have the right, in its sole and absolute discretion, to cause the Company to exchange this Warrant for a new warrant having substantially similar terms to purchase shares of Senior Preferred Stock as defined in, and subject to the terms and conditions of, the Credit Agreement, and all such terms contained in the Credit Agreement are incorporated by reference herein whether or not the Credit Agreement remains in effect.

ARTICLE 2. ADJUSTMENTS TO THE SHARES.

2.1 Stock Dividends, Subdivisions and Combinations. If the Company declares or pays a dividend on the Shares payable in common stock or other securities, then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without cost to Holder, the total number and kind of securities to which Holder would have been entitled had Holder owned the Shares of record as of the date the dividend occurred. If the Company subdivides the Shares by reclassification, stock split, split up or otherwise into a greater number of shares or takes any other action which increases the number of shares of any class or series of capital stock into which the Shares are convertible, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding Shares are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any reclassification, exchange, substitution, reorganization, merger, consolidation or other event that results in a change of the number and/or class of the underlying securities as to which purchase rights under this Warrant exist, Holder shall be entitled to receive, upon exercise or conversion of this Warrant, the number, amount and kind of securities, money and property that Holder

would have ultimately received upon the completion of such reclassification, exchange, substitution, reorganization, merger, consolidation or other event if this Warrant had been exercised immediately before such reclassification, exchange, substitution, reorganization, merger, consolidation or other event. Such an event shall include any automatic conversion of the outstanding or issuable securities of the Company of the same class or series as the Shares to common stock pursuant to the terms of the Company's Certificate of Incorporation (the "Certificate"). The Company or its successor shall promptly issue to Holder an amendment to this Warrant setting forth the number and kind of such new securities or other property issuable upon exercise or conversion of this Warrant as a result of such reclassification, exchange, substitution, reorganization, merger, consolidation or other event that results in a change of the number and/or class of securities issuable upon exercise or conversion of this Warrant. The amendment to this Warrant shall provide for adjustments which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Article 2 including, without limitation, adjustments to the Warrant Price and to the number of securities or property issuable upon exercise of the new Warrant. The provisions of this Article 2.2 shall similarly apply to successive reclassifications, exchanges, substitutions, reorganizations, mergers, consolidations or other events.

2.3 Adjustments for Diluting Issuances. The Warrant Price and the number of Shares issuable upon exercise of this Warrant, and the number of shares of common stock or other securities issuable upon conversion of the Shares, shall be subject to adjustment, from time to time in the manner set forth in the Certificate as if the Shares were issued and outstanding on and as of the date of any such required adjustment. The provisions set forth for the Shares in the Certificate relating to the above in effect as of the Issue Date may not be amended, modified or waived, without the prior written consent of Holder unless such amendment, modification or waiver affects the rights associated with the Shares in the same manner as such amendment, modification or waiver affects the rights associated with all other shares of the same series and class as the Shares.

2.4 No Impairment. Without the prior written consent of Holder, the Company shall not, by amendment of the Certificate, the Stockholder's Agreement or its by-laws, or through any reorganization, recapitalization, share exchange, transfer of assets, consolidation, merger, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and shall at all times in good faith assist in carrying out of all such terms and in taking all such action as may be necessary or appropriate to protect Holder's rights against such avoidance or impairment.

2.5 Fractional Shares. No fractional Shares shall be issuable upon exercise or conversion of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional share interest arises upon any exercise or conversion of the Warrant, the Company shall eliminate such fractional share interest by paying Holder the amount computed by multiplying the fractional interest by the fair market value of a full Share.

2.6 Certificate as to Adjustments. Upon each adjustment of the Warrant Price or the kind or number of securities issuable under this Warrant pursuant to this Article 2, the Company shall promptly notify Holder in writing, and, at the Company's expense, promptly compute such adjustment, and furnish Holder with a certificate of its Chief Executive Officer, Corporate Secretary or a senior financial officer setting forth such adjustment and the facts upon which such adjustment is based. The Company shall, upon written request, furnish Holder a certificate setting forth the Warrant Price and the number and kind of securities issuable under

this Warrant in effect upon the date thereof and the series of adjustments leading to such Warrant Price and such number and kind of securities.

ARTICLE 3. REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants and covenants to Holder as follows:

(a) The Company has all requisite legal and corporate power and authority, and has taken all corporate action on the part of itself, its officers, directors and stockholders necessary, to execute, issue and deliver this Warrant, to issue the Shares issuable upon exercise or conversion of this Warrant and the securities issuable upon conversion of the Shares, and to carry out and perform its obligations under this Warrant, and this Warrant constitutes the legally binding and valid obligation of the Company enforceable in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, or similar laws relating to or affecting the enforcement of creditors' rights, or to principles of equity.

(b) This Warrant has been validly issued and is free of restrictions on transfer other than restrictions on transfer set forth herein and under applicable state and federal securities laws. All Shares which may be issued upon the exercise of the purchase or conversion right represented by this Warrant, and all securities, if any, issuable upon conversion of the Shares, shall, upon issuance, be duly authorized, validly issued, fully paid and nonassessable, and free of any liens and encumbrances (including preemptive or other similar rights) except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

(c) The execution, delivery, and performance of this Warrant will not result in a violation of, be in conflict with, or constitute a default under, with or without the passage of time or giving of notice, any provision of the Certificate, the Stockholder's Agreement (as defined in Section 3.3) or the Company's by-laws, any provision of any judgment, decree, or order to which the Company is a party, by which it is bound, or to which any of its material assets are subject, any contract, obligation, or commitment to which the Company is a party or by which it is bound, or any statute, rule, or governmental regulation applicable to the Company, or the creation of any lien, charge, or encumbrance upon any assets of the Company.

(d) The Company has provided Holder with a capitalization table of the Company, and such capitalization table is complete and accurate as of the date hereof and reflects all outstanding capital stock of the Company and all outstanding warrants, options, conversion privileges, preemptive rights and other rights or agreements to purchase or otherwise acquire or issued any equity securities or convertible debt securities of the Company. The Company has reserved a sufficient number of Shares for issuance upon the exercise of this Warrant and a sufficient number of shares of the securities issuable upon conversion of the Shares.

(e) The Warrant Price is no greater than the lowest price at which the Company has issued Series B Preferred Stock.

3.2 Notice of Certain Events; Information. If the Company proposes at any time (a) to declare any dividend or distribution upon any of its stock, whether in cash, property,

stock, or other securities and whether or not a regular cash dividend; (b) to effect any reclassification or recapitalization of any of its stock; (c) to merge or consolidate with or into any other corporation, or sell, lease, license, or convey all or substantially all of its assets, (d) to approve or participate in any Acquisition or an IPO, (e) to liquidate, dissolve or wind up, or (f) to take any action or to effect any transaction which requires the Company to provide notice to other holders of the Shares, then, in connection with each such event, the Company shall give Holder: (1) at least ten (10) days prior written notice of the date on which a record will be taken for such dividend or distribution (and specifying the date on which the holders of stock will be entitled thereto) or for determining rights to vote, if any, in respect of the matters referred to in (a) above; and (2) in the case of the matters referred to in (b), (c), (d), (e) or (f) above, at least ten (10) days prior written notice of the date when the same will take place (and, if applicable, specifying the date on which the holders of stock will be entitled to exchange their common stock for securities or other property deliverable upon the occurrence of such event). The Company will also use commercially reasonable efforts to provide such information in its possession as is requested by Holder and as is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements, including without limitation, a capitalization table, to be provided to Holder within thirty (30) days after the end of each fiscal quarter of the Company, and including the per share price of the Company's equity securities most recently issued prior to the date such capitalization table and indication are so provided; provided, that the Company's obligations set forth in this sentence shall terminate immediately prior to the Company's IPO.

3.3 Stockholder's Agreement; No Other Stockholder Rights. Except as provided in this Warrant and subject to the following provisions of this Section 3.3, Holder will not have any rights as a stockholder of the Company until the exercise of this Warrant. Effective upon any exercise or conversion of this Warrant, Holder and any permitted transferee of the Warrant or the Shares shall be entitled to all of the rights and benefits provided to all other holders of the Shares pursuant to, and the Company and Holder agree that Holder (and any permitted transferee of the Warrant or the Shares) will execute a counterpart signature page and become a party to (a) the Amended and Restated Investors' Rights Agreement dated as of October 31, 2013 by and among the Company and certain of its stockholders (as the same may be amended and/or restated from time to time the "Stockholder's Agreement"), provided that no such amendment shall in any respect restrict Holder's or such permitted transferee's right and ability to transfer this Warrant or the Shares to any affiliate of Holder or such permitted transferee and (b) provided Holder or any permitted transferee agrees to become a party to any such agreement entered into hereafter (such agreement not to be unreasonably withheld), any agreement to which holders of the Shares may hereafter become parties and the Shares may become bound (including, without limitation, any stockholders, investor rights, registration rights, right of refusal, voting and co-sale rights or similar agreement); and provided, that (v) Holder and any permitted transferee shall have all of the rights of each other holder of shares under the Stockholder's Agreement without regard to any applicable minimum share ownership or other requirement on which such rights are conditioned (excluding any observer rights under Section 3.3 of the Stockholder's Agreement), (w) with respect to Holder and its permitted transferees and assigns, notwithstanding any term or restriction on transfer contained in the Stockholder's Agreement, Holder and its permitted transferees shall have the unrestricted right to transfer all or any portion of the Shares to any assignee of or purchaser from Holder or its affiliate of their rights under the Credit Agreement (to the extent permitted by the Credit Agreement) or any interest or participation therein, (x) Holder and its permitted transferees may transfer its rights under the Stockholder's Agreement to any affiliate of Holder or any assignee of or purchaser from Holder or its affiliates of their rights under the Credit Agreement (to the extent permitted by the Credit Agreement) or any interest or participation therein, (y) Holder and its permitted

transferees shall have any purchase, participation, preemptive and registration rights granted to any other holders of the Shares under the Stockholder's Agreement, and (z) in the event any term, restriction or condition of the Stockholder's Agreement or any such agreement conflicts with, is inconsistent with or would otherwise prohibit or restrict the exercise of any right of Holder under this Warrant, the terms of this Warrant shall control and this Warrant and Holder shall not be subject to such term, restriction or condition. As an illustration and not by way of limitation as to the purpose and intent of this Section 3.3, the Company shall grant registration rights to Holder for any Shares acquired by Holder upon exercise or conversion of this Warrant or conversion of such Shares in parity to the registration rights granted to any other holder of the Shares party to the Stockholder's Agreement.

ARTICLE 4. REPRESENTATIONS AND WARRANTIES OF HOLDER. Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the securities to be acquired upon exercise of this Warrant by Holder will be acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act and Holder has no present intention of selling or engaging in any public distribution of the same except pursuant to a registration or exemption. Holder also represents that Holder has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise or conversion hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise or conversion hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state

securities laws, or unless exemption from such registration and qualification are otherwise available.

4.6 Market Stand-Off. Holder hereby agrees that, in connection with the Company's IPO it shall not to the extent requested by the Company's underwriter(s) sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company (other than any disposed of in the registration and those acquired by Holder in the IPO or thereafter in open market transactions, or any disposed of in a private transaction to a transferee who agrees to be bound by the terms of this Section 4.6) for up to 180 days from the effective date of the registration statement filed in connection with the IPO; provided, however, that such 180 day period may be extended to the extent necessary to permit any managing underwriter to comply with NASD Rule 2711(f)(4); provided further, however, that Holder shall not be bound by the restrictions set forth in this Section 4.6 unless all five percent stockholders of the Company also agree to such restrictions; and provided, further, that any discretionary waiver or termination of the foregoing restrictions by the Company or the underwriters shall apply to all holders of the Company's equity securities subject to such restrictions pro rata based on the number of shares subject to such restrictions, Holder agrees to enter into the form of agreement as reasonably requested by the underwriter(s) in connection with this Section 4.6.

ARTICLE 5. MISCELLANEOUS.

5.1 Term. This Warrant is exercisable in whole or in part at any time and from time to time on or before the Expiration Date. The conditions under which the Warrant shall automatically convert on the Expiration Date are set forth in Section 5.8 below.

5.2 Legends.

(a) This Warrant and the Shares (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) shall be imprinted with a legend in substantially the following form:

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT PURSUANT TO THE PROVISIONS OF ARTICLE 5, MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED UNLESS REGISTERED UNDER SAID ACT AND APPLICABLE STATE SECURITIES LAW, OR UNLESS SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION CAN BE MADE IN COMPLIANCE WITH RULE 144 OF THE ACT, OR UNLESS, IN THE OPINION OF LEGAL COUNSEL IN FORM AND SUBSTANCE REASONABLY SATISFACTORY TO THE ISSUER OF THESE SECURITIES, SUCH OFFER, SALE OR TRANSFER, PLEDGE OR HYPOTHECATION IS EXEMPT FROM REGISTRATION.

THE SECURITIES EVIDENCED BY THIS CERTIFICATE ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE, INCLUDING A MARKET STAND-OFF PERIOD OF UP TO 180 DAYS IN THE EVENT OF A PUBLIC OFFERING, OR FOR A LONGER PERIOD NOT TO EXCEED 34 DAYS IF THE ISSUER'S TRANSFER AGENT IS NOTIFIED BY THE ISSUER OR THE ISSUER'S COUNSEL THAT THIS MARKET STAND-OFF RESTRICTION HAS

BEEN EXTENDED FOR THE PURPOSE OF COMPLYING WITH NASD RULE 2711(F)(4).

(b) Notwithstanding the foregoing, neither this Warrant nor any certificate or instrument evidencing this Warrant or the Shares shall bear, and the Company hereby agrees to remove, within ten (10) days of any written request (together with such evidence or documentation described in the following provisions) by Holder, pursuant to the following provisions of this Section 5.2(b), or not to affix, as applicable, any restrictive or other legend, notice or provision restricting the sale or transfer of this Warrant or the Shares, in each case provided that Holder has provided reasonable evidence to the Company (including any customary broker's or transferring stockholder's letters but expressly excluding an opinion of counsel other than with respect to clause (D) below) that: (A) a transfer of this Warrant or the Shares, as applicable, has been made pursuant to SEC Rule 144 (assuming the transferor is not an "affiliate" (as defined in SEC Rule 144) of the Company); (B) the Warrant or the Shares, as applicable, are then eligible for transfer pursuant to SEC Rule 144; (C) a transfer of this Warrant or the Shares has been made for no consideration to an affiliate of Holder or has otherwise been made to any affiliate of Holder who is an "accredited investor" as defined in Regulation D promulgated under the Act, and that is otherwise in compliance with all applicable securities laws; or (D) in connection with any other sale or transfer, provided that upon the request of the Company, such Holder provides the Company with an opinion of counsel to such Holder, in a reasonably acceptable form to the Company, to the effect that either such sale or transfer may be made without registration under the applicable requirements of the Act or that such a legend, notice or provision is not required by, and is not required in order to establish compliance with any provisions of, the Act. For all purposes of Section 1.4, the Company shall not be deemed to have delivered to Holder Shares unless and until the Company shall have fully complied with all of the terms and conditions of this Section 5.2(b) (if removal has been requested by Holder in compliance with this Section 5.2(b)).

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) may not be transferred or assigned in whole or in part without compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and, subject to Section 5.2(b), legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to an affiliate of Holder. Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144.

5.4 Transfer Procedure. Subject to the provisions of Article 5.3 and upon and effective immediately as of providing the Company with written notice substantially in the form attached as Appendix 2, Holder and any permitted transferee may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant (or the Shares issuable directly or indirectly, upon conversion of the Shares, if any) to any transferee, provided, however, in connection with any such transfer, Holder or such transferee will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and, in the case of transfer to transferee who is not an affiliate of the Holder, Holder or such transferee promptly thereafter surrenders this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable). The Company may refuse to transfer this Warrant or the Shares to any person who directly competes with the Company, unless, in either case, the stock of the Company is publicly traded.

5.5 Notices. All notices, requests, documents and other communications (collectively, "Notices") from the Company to Holder, or vice versa, shall be in writing and deemed validly delivered effective as of the earliest to occur of (a) when actually received, (b) when transmitted by facsimile or electronic mail (PDF), (c) the first business day after mailing by first-class registered or certified mail, postage prepaid, or after deposit with a reputable overnight courier with all charges paid, in each case other than actual receipt at such mailing, facsimile or electronic mail address as may have been furnished to the Company or Holder, as the case may be. As used in this Warrant, "business days" shall refer to all days other than any Saturday, Sunday or day on which the Company's primary depository bank is closed. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

_____

_____

_____

Attn:
Fax:
Email:

With a copy to:

_____

_____

_____

Attn:
Fax:
Email:

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

CATABASIS PHARMACEUTICALS, INC.
One Kendall Square, Suite B14202
Cambridge, MA 02139
Attention: Ian Sanderson, CFO
Fax:
E-Mail:

With a copy to:

_____

_____

_____

Attn:
Fax:
Email:

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorneys' Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees.

5.8 Automatic Conversion upon Expiration. Unless Holder notifies the Company in writing to the contrary prior to such automatic conversion, in the event that, upon the earliest to occur of the Expiration Date or any expiration, involuntary termination or cancellation of this Warrant, the fair market value of one Share as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed as of immediately before such date to have been converted pursuant to Section 1.2 above as to all Shares for which it shall not previously have been exercised or converted, and the Company shall promptly deliver a certificate representing the Shares issued upon such conversion to the Holder.

5.9 Counterparts. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement.

5.10 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of Delaware without giving effect to its principles regarding conflicts of law.

5.11 Headings. The various headings in this Warrant are inserted for convenience only and shall not affect the meaning or interpretation of this Warrant or any provisions hereof.

5.12 Severability. In the event any one or more of the provisions of this Warrant shall for any reason be held invalid, illegal or unenforceable, the remaining provisions of this Warrant shall be unimpaired, and the invalid, illegal or unenforceable provision shall be replaced by a mutually acceptable valid, legal and enforceable provision.

[***Balance of Page Intentionally Left Blank***]

"COMPANY" Date: , 201

CATABASIS PHARMACEUTICALS, INC.

By: _____ (SEAL)

Name: _____
(Print)

Title: _____

"HOLDER"

SQUARE 1 BANK

By:

By: _____ (SEAL)
Name: _____
(Print)

Title: _____

APPENDIX 1

NOTICE OF EXERCISE

1. Holder elects to purchase shares of the [Preferred/Common] Stock of CATABASIS PHARMACEUTICALS, INC. pursuant to the terms of the attached Warrant, and tenders payment of the purchase price of the shares in full.

[or]

1. Holder elects to convert the attached Warrant into Shares/cash [strike one] in the manner specified in the Warrant. This conversion is exercised for of the Shares covered by the Warrant.

[Strike paragraph that does not apply.]

2. Please issue a certificate or certificates representing the shares in the name specified below:

_____
Holder's Name

(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Article 4 of the Warrant as the date hereof.

HOLDER:

By: (SEAL)

Name:

Title:

(Date):

APPENDIX 2

ASSIGNMENT

For value received, hereby sells, assigns and transfers unto

Name:

Address:

Tax ID:

that certain Warrant to Purchase Stock issued by CATABASIS PHARMACEUTICALS, INC. (the "Company"), on , 201 (the "Warrant") together with all rights, title and interest therein.

HOLDER:

SQUARE 1 BANK

By: (SEAL)

Name:

Title:

Date:

By its execution below, and for the benefit of the Company, makes each of the representations and warranties set forth in Article 4 of the Warrant and agrees to all other provisions of the Warrant as of the date hereof.

[NAME OF TRANSFEREE]

By: (SEAL)

Name:

Title:

Exhibit F

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT

AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL TO THE TRANSFEROR TO SUCH EFFECT, THE SUBSTANCE OF WHICH SHALL BE REASONABLY ACCEPTABLE TO THE COMPANY.

COMMON STOCK PURCHASE WARRANT

CATABASIS PHARMACEUTICALS, INC.

Warrant Shares: Issue Date: _____
(the "Original Issue Date")

This COMMON STOCK PURCHASE WARRANT (the "Warrant") certifies that, for value received, MIDCAP FINANCIAL SBIC, LP, a Delaware limited partnership, its successors and assigns (together, "Holder") is entitled, at any time on or after the Issue Date specified above and on or prior to the close of business on (the "Expiration Date"), to purchase from CATABASIS PHARMACEUTICALS, INC., a Delaware corporation (the "Company"), up to ( ) shares (the "Shares") of the Common Stock, par value $0.001 per share, of the Company (the "Common Stock") at a purchase price per share equal to $ (the "Warrant Price"), subject to the provisions and upon the terms and conditions set forth in this Warrant.

ARTICLE 1
EXERCISE.

1.1 Method of Exercise. Holder may exercise this Warrant in whole or in part by delivering to the Company a duly executed facsimile or electronic (pdf) copy of a Notice of Exercise in substantially the form attached as Appendix 1 (or by delivery of an original or copy of such Notice of Exercise by any other method permitted for providing notices under Article 5.4). Unless Holder is exercising the cashless exercise right set forth in Article 1.2, Holder shall, concurrently therewith, also deliver to the Company a certified or bank cashier's check, wire transfer of immediately available funds (to an account designated by the Company), or other form of payment acceptable to the Company, in the amount of the aggregate Warrant Price for the Shares being purchased. As used herein, "Trading Day" means a day on which the principal Trading Market is open for trading, and "Trading Market" means any of the following markets or exchanges on which the Common Stock is or has most recently been listed or quoted for trading on the date in question: the NYSE Amex, the Nasdaq Capital Market, the Nasdaq Global

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Market, the Nasdaq Global Select Market, the New York Stock Exchange or the OTC Bulletin Board (or any successors to any of the foregoing).

1.2 Cashless Exercise. This Warrant may be exercised, in whole or in part, by means of a "cashless exercise" in which the Holder shall be entitled to receive a certificate for the number of the Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = the VWAP on the Trading Day immediately preceding the date on which Holder elects to exercise this Warrant by means of a "cashless exercise," as set forth in the applicable Notice of Exercise;

(B) = the Warrant Price, as adjusted hereunder; and

(X) = the number of the Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

As used herein, "VWAP" shall mean, with respect to one Share for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if the Common Stock is listed or quoted on the National Association of Securities Dealers, Inc. OTC Bulletin Board (the "OTC Bulletin Board") but the OTC Bulletin Board is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the OTC Bulletin Board, (c) if the Common Stock is not then listed or quoted for trading on the OTC Bulletin Board and if prices for the Common Stock are then reported in the "Pink Sheets" published by Pink OTC Markets, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of one Share as reasonably determined by the Board of Directors of the Company in good faith (provided, that in the event Holder's cashless exercise under Article 1.2 is exercised or deemed exercised in connection with an Acquisition, such fair market value shall be determined based upon the cash and fair market value of any securities and other consideration as would have been paid for or in respect of each Share issuable (as of immediately prior to the closing of the Acquisition) upon exercise of this Warrant as if such Share had been issued and outstanding on and as of the closing of such Acquisition).

1.3 Delivery of Certificate and New Warrant. Within five (5) Trading Days after Holder exercises this Warrant and, if applicable, the Company receives payment of the aggregate Warrant Price, the Company shall deliver to Holder certificates for the Shares acquired and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired. The Shares shall be deemed to have been issued, and Holder or any other person designated by Holder to be

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named therein shall be deemed to have become a holder of record of such Shares for all purposes as of 5:00 p.m. (Eastern Time) on the date the Warrant shall have been exercised. If the Company fails to deliver a certificate or certificates for the Shares as provided herein, in addition to any other remedy available to Holder hereunder, at law or in equity, Holder will have the right to rescind the exercise of this Warrant.

1.4 Replacement of Warrants. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form and amount to the Company or, in the case of mutilation, on surrender and cancellation of this Warrant, the Company shall execute and deliver, in lieu of this Warrant, a new warrant of like tenor and amount.

1.5 Treatment of Warrant Upon Acquisition of the Company.

1.5.1 Certain Definitions. For the purposes of this Warrant, "Acquisition" means (A) any sale, license or any other disposition of all or substantially all of the assets of the Company, or (B) any reorganization, consolidation, or merger of the Company with or into another person or entity, or (C) any sale of outstanding Company securities by holders thereof, whereby, in the case of (B) or (C) above, the holders of the Company's voting securities before the transaction beneficially own less than a majority of the outstanding voting securities of the successor or surviving entity after the transaction (or, if the surviving entity is a wholly-owned subsidiary of another corporation, such surviving entity's parent). As used in this Article 1.5, "Marketable Securities" means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded on a Trading Market, and (iii) Holder would not be restricted by contract or by applicable federal and state securities laws from re-selling, within six (6) months and one day in compliance with the federal securities laws, rules and regulations, following the closing of such Acquisition, all of the issuer's shares and/or other securities that would be received by Holder in such Acquisition were Holder to exercise this Warrant in full on or prior to the closing of such Acquisition. For purposes of this Article 1.5, "Affiliate" shall mean any person or entity that controls, is controlled by or is under common control with any such person or entity, and each of such person's or entity's officers, directors, members, managers, joint venturers or partners, as applicable (whether as a result of the ownership of voting securities, by contract or otherwise).

1.5.2 Treatment of Warrant Upon Acquisition.

(A) Cash or Marketable Securities Acquisition. In the event of an Acquisition in which (1) the sole consideration is cash, Marketable Securities, or a combination thereof and (2) such consideration is received by the Company's stockholders in respect of their shares of the Company's capital stock (including, without limitation, pursuant to the dissolution and liquidation of the Company in connection with or as a result of such Acquisition), Holder may exercise its cashless exercise or purchase right under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such Acquisition; provided, that if the Holder fails to make such election prior to the consummation of the Acquisition, the Warrant will, subject to Article 5.7, expire upon the consummation of such Acquisition. The Company shall provide Holder with written notice of any proposed Acquisition (which notice shall reasonably identify the parties thereto, the proposed structure thereof, the amount and kind of consideration to be paid in connection therewith and the terms and conditions of payment, the number of shares of capital stock outstanding or issuable upon the exercise of rights then outstanding, and facts as shall be reasonably necessary to indicate the effect of the Acquisition on this Warrant), together with such reasonable information as Holder may request in connection with such contemplated Acquisition giving rise to such notice, which shall be delivered to Holder not less than ten (10) days prior to the closing of the proposed Acquisition. Any exercise of this Warrant after delivery of such notice and prior to the consummation of the Acquisition described in such notice shall be deemed to be an exercise in connection with such Acquisition for purposes of Article 1.2. If the Acquisition described in such notice is terminated or abandoned prior to the consummation thereof, the Company shall provide prompt notice thereof and, unless Holder advises the Company in a written notice that it elects to reaffirm the exercise, any purported exercise of this Warrant in connection with such proposed Acquisition shall be null and void.

(B) Asset Sale. In the event of an Acquisition that is an arm's length sale or license of all or substantially all of the Company's assets (and only its assets) to a third party that is not an Affiliate of the Company and to which 1.5.2(A) above does not apply (a "True Asset Sale"), Holder may, at its option, (1) exercise its rights under this Warrant and such exercise will be deemed effective immediately prior to the consummation of such True Asset Sale, or (2) elect to have the terms of Section 1.5.2(C) below apply; provided, that if Holder fails to exercise or make such election prior to the consummation of the Acquisition the Warrant will continue until the Expiration Date if the Company continues as a going concern following the closing of any such True Asset Sale. The Company shall provide Holder with written notice of any proposed True Asset Sale (which notice shall identify the parties thereto, the proposed structure thereof, the amount and kind of consideration to be paid in connection therewith and the terms and conditions of payment, the number of shares

of capital stock outstanding or issuable upon the exercise of rights then outstanding, and facts as shall be reasonably necessary to indicate the effect of the True Asset Sale on this Warrant), together with such reasonable information as Holder may request in connection with such True Asset Sale giving rise to such notice, which shall be delivered to Holder not less than ten (10) days prior to the closing of the proposed True Asset Sale. Any exercise of this Warrant after delivery of such notice and prior to the consummation of the True Asset Sale described in such notice shall be deemed to be an exercise in connection with such True Asset Sale for purposes of Article 1.2. If the True Asset Sale described in such notice is terminated or abandoned prior to the consummation thereof, the Company shall provide prompt notice thereof and any purported exercise of this Warrant in connection with such proposed True Asset Sale shall be null and void.

(C) Assumption of Warrant. Upon the closing of any Acquisition other than as particularly described in subsection (A) or (B) above, the surviving or successor entity shall assume this Warrant and the obligations of the Company hereunder, and this Warrant shall, from and after such closing, be exercisable for the same class, number and kind of securities, cash and other property as would have been paid for or in respect of the Shares issuable (as of immediately prior to such closing) upon exercise in full hereof as if such Shares had been issued and outstanding on and as of such closing, at an aggregate Warrant Price equal to the aggregate Warrant Price in effect as of immediately prior to such closing (with the Warrant Price being appropriately adjusted and apportioned based upon such securities, cash and other property in order to protect the economic value of this Warrant immediately prior to the closing of such Acquisition); and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The Company shall cause any surviving or successor entity in an Acquisition in which the Company is not the surviving or successor entity to assume in writing all of the obligations of the Company under this Warrant prior to the closing of such Acquisition, including agreements to deliver to Holder in exchange for this Warrant a security of such surviving or successor entity evidenced by a written instrument issued by the surviving or successor entity substantially similar in form to this Warrant and exercisable as provided herein (without regard to any limitations on the exercise of this Warrant). Upon the closing of such an Acquisition, the surviving or successor entity shall succeed to, and be substituted for, and shall assume all of the obligations of the Company under this Warrant.

(D) Conditional Exercise. Notwithstanding any other provision hereof, if an exercise of this Warrant is to be made in connection with an Acquisition, such exercise may at the election of Holder be conditioned upon the consummation of such transaction, in which case such exercise

shall not be deemed to be effective until immediately prior to the consummation of such transaction.

ARTICLE 2
ADJUSTMENTS TO THE SHARES.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend on the outstanding shares of the Common Stock payable in additional shares of the Common Stock or other securities, then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without cost to Holder, the total number and kind of securities to which Holder would have been entitled had Holder owned the Shares of record as of the date the dividend occurred. If the Company subdivides the outstanding shares of the Common Stock by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Common Stock are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Conversion or Substitution. Upon any reclassification, exchange, conversion, substitution or similar event affecting the outstanding shares of the Common Stock, Holder shall be entitled to receive, upon exercise of this Warrant, the number and kind of securities and property that Holder would have received for the Shares if this Warrant had been exercised in full immediately before such reclassification, exchange, conversion, substitution or similar event, at an aggregate Warrant Price not exceeding the aggregate Warrant Price in effect as of immediately prior thereto. The Company or its successor shall promptly issue to Holder a certificate pursuant to Article 2.6 hereof setting forth the number, class and series or other designation of such new securities or other property issuable upon exercise of this Warrant as a result of such reclassification, exchange, conversion, substitution or similar event. The provisions of this Article 2.2 shall similarly apply to successive reclassifications, exchanges, conversions, substitutions, and similar events.

2.3 Pro Rata Distributions. In addition to any adjustments pursuant to Articles 2.1 and 2.2 above, the Holder, as the holder of this Warrant, shall be entitled to receive such dividends paid and distributions of any kind made to the holders of Common Stock of the Company to the same extent as if the Holder had exercised this Warrant into Common Stock (without regard to any limitations on exercise herein or elsewhere and without regard to whether or not a sufficient number of shares are authorized and reserved to effect any such exercise and issuance) and had held such shares of Common Stock on the record date for such dividends and distributions. Payments under the preceding sentence shall be made concurrently with the dividend or distribution to the holders of Common Stock.

2.4 No Impairment. The Company shall not, by amendment of its Certificate of Incorporation or through any reorganization, recapitalization, transfer of assets, consolidation, merger, share exchange, dissolution, issue, sale of securities, closing of its

stockholder books and records, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be observed or performed under this Warrant by the Company, but shall at all times in good faith assist in carrying out of all the provisions of this Article 2 and in taking all such actions as may be necessary or appropriate to protect Holder's rights under this Warrant against impairment.

2.5 Fractional Shares. No fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Warrant Price or round up to the next whole share.

2.6 Certificate as to Adjustments. Upon each adjustment of the Warrant Price, the Common Stock and/or number of Shares, or upon the occurrence of any transaction or event described in this Article 2, the Company shall promptly notify Holder in writing, and, at the Company's expense, promptly compute such adjustment, and furnish Holder with a certificate of its Chief Financial Officer setting forth such adjustment and the facts upon which such adjustment is based. The Company shall, upon written request, furnish Holder a certificate setting forth the Warrant Price, Common Stock and number of Shares in effect upon the date thereof and the series of adjustments leading to such Warrant Price, Common Stock and number of Shares.

ARTICLE 3
REPRESENTATIONS, WARRANTIES, AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, Holder as follows:

3.1.1 Corporate Existence. The Company is a corporation duly organized, validly existing and in good standing in its jurisdiction of incorporation, has the corporate power and authority to own and operate its properties and to carry on its business as now conducted and as proposed to be conducted, and is qualified as a foreign corporation in all jurisdictions where such qualification is required.

3.1.2 Corporate Authority. The Company has all requisite legal and corporate power and authority to execute, issue and deliver this Warrant, to issue the Shares issuable upon exercise of this Warrant, and to carry out and perform its obligations under this Warrant.

3.1.3 Corporate Action. All corporate action on the part of the Company, ifs officers, directors and shareholders, necessary for the authorization, execution, delivery and performance of its obligations under this Warrant and for the authorization, issuance and delivery of this Warrant and the Shares issuable upon exercise hereof has been taken and this Warrant constitutes the legally binding and valid obligation of the Company enforceable in accordance with its terms.

3.1.4 No Violation. The execution, delivery and performance of this Warrant will not result in (i) any violation of, be in conflict with, or constitute a default under, with or without the passage of time or the giving of notice, any provision of the Company's Certificate of Incorporation or by-laws, as amended, any provision of any judgment, decree, or order to which the Company is a party, by which it is bound, or to which any of its material assets are subject, any contract, obligation or commitment to which the Company is a party or by which it is bound, or (ii) the creation of any lien, charge, encumbrance or restriction on any assets of the Company.

3.1.5 Authorized Shares. The Company shall at all times during the term of this Warrant keep reserved out of its authorized and unissued capital stock a sufficient number of shares of Common Stock to permit exercise in full of this Warrant. All Shares which may be issued upon the exercise of this Warrant shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

3.2 Exchange Act Reports; Legend.

3.2.1 Reports. With a view to making available to Holder the benefits of Securities and Exchange Commission ("SEC") Rule 144 and any other rule or regulation of the SEC that may at any time permit Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3 (or any other Form that may be available at the time of such proposed sale), the Company shall, so long as it is subject to the reporting requirements of the Act (and the rules and regulations promulgated thereunder) and the Exchange Act, (A) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times; (B) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Act and the Exchange Act; and (C) furnish to Holder, so long as Holder owns the Warrant or Shares, forthwith upon request (1) a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144, the Act and the Exchange Act, or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (or any other Form that may be available at the time of such proposed sale), and (2) such other information as may be reasonably requested in availing Holder of any rule or regulation of the SEC that permits the sale of any securities without registration or pursuant to Form S-3 (or any other Form that may be available at the time of such proposed sale).

3.2.2 Legend. Neither this Warrant nor any certificate or instrument evidencing this Warrant or the Shares shall bear (and the Company hereby agrees to remove or not to affix, as applicable and provided herein) any restrictive or other legend, notice or provision (including without limitation the legend included on the first page of this Warrant as of the Issue Date or any similar legend) restricting the sale or transfer of this Warrant or the Shares if (A) a transfer of this

Warrant or the Shares is made or proposed to be made pursuant to SEC Rule 144 or (B) such a legend, notice or provision is not required in order to establish compliance with any provisions of the Act. Within five (5) Trading Days of (X) any written request by Holder indicating its intention to make a transfer of this Warrant or all or a portion of the Shares pursuant to SEC Rule 144 or (Y) satisfaction of the registration and prospectus delivery requirements of the Act, the Company shall remove any such legend, notice or provision restricting the sale or transfer of this Warrant or the Shares, as applicable. Notwithstanding the foregoing or anything to the contrary contained in this Warrant, no certificate or certificates for any Shares purchased hereunder shall bear any restrictive or other legend, notice or provision restricting the sale or transfer of Shares if, as of the date of any exercise or conversion of this Warrant, the Shares may be transferred pursuant to SEC Rule 144 and, if such sale or transfer cannot, as of such exercise or conversion date, be made, the Company shall cause any such legend, notice or provision to be removed from all or any such certificates within five (5) Trading Days of the first date on which such a transfer pursuant to SEC Rule 144 can be made. For all purposes of Article 1.3, the Company shall not be deemed to have delivered to Holder Shares unless and until the Company shall have fully complied with all of the terms and conditions of this Article 3.2.2.

3.3 No Shareholder Rights. Except as provided in this Warrant, Holder will not have any rights as a shareholder of the Company with respect to the Shares issuable hereunder until the exercise of this Warrant.

ARTICLE 4
REPRESENTATIONS AND WARRANTIES OF HOLDER.

4.1 Holder represents and warrants to the Company as follows:

4.1.1 Purchase for Own Account. This Warrant and the securities to be acquired upon exercise of this Warrant by Holder will be acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act, and has no present intention of distributing this Warrant and the securities in violation of the Securities Act or any applicable state securities law and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such securities in violation of the Act or any applicable state securities law (this representation and warranty not limiting the Holder's right to sell such securities at any time pursuant to the registration statement described herein or otherwise in compliance with applicable federal and state securities laws). Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.1.2 Disclosure of Information. Holder has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions

and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.1.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.1.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.1.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available.

4.1.6 Reliance on Exemptions. The Holders understands that this Warrant and the Shares issuable upon exercise hereof may be offered and sold to it in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and that the Company is relying in part upon the truth and accuracy of, and the Holder's compliance with, the representations, warranties, agreements, acknowledgments and understandings of the Holder set forth herein in order to determine the availability of such exemptions and the eligibility of the Holder to acquire the Warrant and the Shares.

4.1.7 No Governmental Review. The Holder understands that no U.S. federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of this Warrant and the Shares or the fairness or suitability of an investment in such securities nor have such authorities passed upon or endorsed the merits of the offering of such securities.

4.1.8 Validity; Enforcement. This Warrant has been duly and validly authorized, executed and delivered on behalf of the Holder and is a valid and binding agreement of the Holder enforceable against the Holder in accordance with its terms, subject as to enforceability to general principles of equity and to applicable bankruptcy, insolvency, reorganization, moratorium, liquidation and other similar laws relating to, or affecting generally, the enforcement of applicable creditors' rights and remedies.

4.1.9 No Short Selling. The Holder represents and warrants to the Company that at no time prior to the date of this Agreement has any of the Holder, its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any (i) "short sale" (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of the Company's common stock or (ii) hedging transaction, which establishes a net short position with respect to the common stock.

ARTICLE 5
MISCELLANEOUS.

5.1 Term. This Warrant is exercisable in whole or in part at any time and from time to time on or before the Expiration Date.

5.2 Legend. Subject to Article 3.2.2 above, each certificate representing Shares issued upon any exercise hereof shall be imprinted with a legend in substantially the following form:

THE SHARES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS PROVIDED IN THAT CERTAIN COMMON STOCK PURCHASE WARRANT ISSUED BY THE COMPANY TO MIDCAP FINANCIAL SBIC, LP DATED AS OF , 201 , MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED (UNLESS SUCH TRANSFER IS TO AN AFFILIATE OF HOLDER), PLEDGED OR HYPOTHECATED UNLESS AND UNTIL REGISTERED UNDER THE ACT AND APPLICABLE STATE SECURITIES LAWS, OR SUCH OFFER, SALE, TRANSFER, PLEDGE OR HYPOTHECATION IS PERMITTED UNDER RULE 144 OF THE ACT OR IS EXEMPT FROM SUCH REGISTRATION.

5.3 Transfer Procedure. Subject to compliance with any applicable securities laws and upon providing the Company with written notice in substantially the form attached as Appendix 2, Holder may transfer all or part of this Warrant (and all rights hereunder) or the Shares issuable upon exercise of this Warrant to any transferee, provided, however, in connection with any such transfer, Holder will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable).

5.4 Notices; Business Day. Unless otherwise specifically provided herein, all notices, requests, documents or other communications by either the Company or Holder to the other must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail (if an email address is specified herein) or facsimile transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, facsimile number, or email address indicated below. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day. For purposes of this Article 5.4, "Business Day" shall mean any day that is not a Saturday, Sunday or a day on which Holder is closed. The Company or Holder may change its mailing or electronic mail address or facsimile number by giving the other party written notice thereof in accordance with the terms of this Article 5.4.

If to the Company:

CATABASIS PHARMACEUTICALS, INC.
One Kendall Square, Suite B14202
Cambridge, MA 02139
Attention: Ian Sanderson, CFO
Fax:
E-Mail:

If to Holder:

MIDCAP FINANCIAL SBIC, LP

7255 Woodmont Avenue, Suite 200
Bethesda, Maryland 20814
Attention: Portfolio Management- Life Sciences
Fax: (301) 941-1450
E-Mail: lviera@midcapfinancial.com

with a copy to:

MC Serviceco, LLC
7255 Woodmont Avenue, Suite 200
Bethesda, Maryland 20814
Attention: General Counsel
Fax: (301) 941-1450
E-Mail: legalnotices@midcapfinancial.com

5.5 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.6 Attorneys' Fees; Remedies. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees and disbursements. Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant.

5.7 Automatic Exercise upon Expiration. This Warrant shall, to the extent not previously exercised, automatically be deemed to have been fully exercised pursuant to Article 1.2 above (even if not surrendered) as of immediately before any expiration, termination or cancellation of this Warrant (including, without limitation, pursuant to Article 1.5.2(A)) if the then Fair Market Value of a Share exceeds the then Warrant Price, unless Holder notifies the Company in writing to the contrary prior to such automatic exercise, and the Company shall promptly deliver a certificate representing the Shares (or such other securities) issued upon such exercise or any consideration payable in respect of such Shares in connection with an Acquisition, if applicable, to Holder or its successor or assigns.

5.8 Counterparts. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement.

5.9 Governing Law. This Warrant and any dispute, disagreement, or issue of construction or interpretation arising hereunder, whether relating to its execution, its validity, the obligations provided herein or performance, shall be governed or interpreted according to the laws of the State of Delaware without regard for principles of conflicts of laws.

5.10 Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced thereby shall inure to the benefit of and be binding upon the successors and assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Shares.

5.11 Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

5.12 Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

5.13 Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

5.14 No Strict Construction. This Warrant shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted.

[Remainder of page left blank intentionally; signature page follows]

IN WITNESS WHEREOF, the parties have executed this Common Stock Purchase Warrant by their duly authorized representatives as of the date first above written.

COMPANY

CATABASIS PHARMACEUTICALS, INC.

By: _____ (SEAL)

Name:

(Print)
Title:

HOLDER

MIDCAP FINANCIAL SBIC, LP

By: MidCap Financial SBIC GP, LLC

By: _____ (SEAL)

Name: _____
(Print)
Title:

APPENDIX 1
TO COMMON STOCK PURCHASE WARRANT

NOTICE OF EXERCISE

TO: CATABASIS PHARMACEUTICALS, INC. ("Company")

1. The undersigned hereby elects to purchase Shares of the Common Stock of Company pursuant to the terms of the Common Stock Purchase Warrant between the undersigned (or the undersigned's predecessor or assignor) and Company, and shall tender payment of the exercise price in full, together with all applicable transfer taxes, if any, in accordance with the terms of the Warrant.

2. Payment shall take the form of (check applicable box):

o in lawful money of the United States; or

o the cancellation of such number of Shares as is necessary, in accordance with the formula set forth in Article 1.2 of the Warrant, to exercise this Warrant with respect to the maximum number of Shares purchasable pursuant to the cashless exercise procedure set forth in Article 1.2 of the Warrant.

3. Please issue a certificate or certificates representing said Shares in the name of the undersigned or in such other name as is specified below:

The Shares shall be delivered by physical delivery of a certificate to:

[SIGNATURE OF HOLDER]

Name of Holder: _____
Signature of Authorized Signatory of Holder: _____
Name of Authorized Signatory: _____
Title of Authorized Signatory: _____
Date: _____

APPENDIX 2
TO COMMON STOCK PURCHASE WARRANT

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to exercise the Warrant.)

For value received, Midcap Financial SBIC, LP hereby sells, assigns and transfers unto

Name:

Address:

Tax ID:

that certain Warrant to Purchase Stock issued by CATABASIS PHARMACEUTICALS, INC. (the "Company"), on , 201 (the "Warrant") together with all rights, title and interest therein.

MIDCAP FINANCIAL SBIC, LP

By: MidCap Financial SBIC GP, LLC

By: _____
Name: _____
Title: _____

Date: _____

By its execution below, and for the benefit of the Company, _____ makes each of the representations and warranties set forth in Article 4 of the Warrant and agrees to all other provisions of the Warrant as of the date hereof.

[NAME OF TRANSFEREE]

By: _____
Name: _____
Title: _____

CREDIT FACILITY SCHEDULE

The following Credit Facilities are specified on this Credit Facility Schedule:

Credit Facility #1:

Credit Facility and Type: Term, Tranche 1

Lenders for and their respective Applicable Commitments to this Credit Facility:

Lender		Applicable Commitment
MidCap Financial SBIC, LP	$	3,500,000
Square 1 Bank	$	1,500,000

The following defined terms apply to this Credit Facility:

Applicable Interest Rate: means (a) eight and fifty hundredths percent (8.50%) per annum with respect to the MidCap Obligations, and (b) five and twelve hundredths percent (5.12%) per annum with respect to the Square 1 Obligations (which, collectively, constitutes a blended interest rate of seven and forty-nine hundredths percent (7.49%) per annum).

Applicable Prepayment Fee: means the following amount, calculated as of the date (the "**Accrual Date**") that the Applicable Prepayment Fee becomes payable in the case of prepayments required under the Financing Documents or the date any voluntary prepayment is made: (a) for an Accrual Date on or after the Closing Date through and including the date which is twelve (12) months after the Closing Date, three percent (3.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater); (b) for an Accrual Date on or after the date which is twelve (12) months after the Closing Date through and including the date which is twenty-four (24) months after the Closing Date, two percent (2.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater); and (c) for an Accrual Date after the date which is twenty-four (24) months after the Closing Date through and including the date immediately preceding the Maturity Date, one percent (1.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater).

Closed Period: not applicable.

Commitment Commencement Date: the Closing Date

Commitment Termination Date: the earliest to occur of (a) the close of the Business Day following the Closing Date, (b) an Event of Default, or (c) the Maturity Date.

Minimum Credit Extension Amount: $5,000,000

Permitted Purpose: not applicable.

Credit Facility #2:

Credit Facility and Type: Term, Tranche 2

Lenders for and their respective Applicable Commitments to this Credit Facility:

Lender		Applicable Commitment
MidCap Financial SBIC, LP	$	7,000,000
Square 1 Bank	$	3,000,000

The following defined terms apply to this Credit Facility:

Applicable Funding Condition: means (1) the Warrants — Tranche 2 have been, or contemporaneously with the Credit Extension will be, duly executed and delivered to Agent, together with evidence reasonably satisfactory to Agent that the Warrants — Tranche 2 and the related shares have been duly authorized and issued by all necessary corporate and shareholder action of Borrower, and (2) Agent has received a completed Credit Extension Form, in accordance with **Section 2.3(a)**.

Applicable Interest Rate: means (a) eight and fifty hundredths percent (8.50%) per annum with respect to the MidCap Obligations, and (b) five and twelve hundredths percent (5.12%) per annum with respect to the Square 1 Obligations (which, collectively, constitutes a blended interest rate of seven and forty-nine hundredths percent (7.49%) per annum).

Applicable Prepayment Fee: means the following amount, calculated as of the date (the "**Accrual Date**") that the Applicable Prepayment Fee becomes payable in the case of prepayments required under the Financing Documents or the date any voluntary prepayment is made: (a) for an Accrual Date on or after the Closing Date through and including the date which is twelve (12) months after the Closing Date, three percent (3.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater); (b) for an Accrual Date on or after the date which is twelve (12) months after the Closing Date through and including the date which is twenty-four (24) months after the Closing Date, two percent (2.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater); and (c) for an Accrual Date after the date which is twenty-four (24) months after the Closing Date through and including the date immediately preceding the Maturity Date, one percent (1.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater).

Closed Period: not applicable.

Commitment Commencement Date: the later to occur of (a) Closing Date, or (b) satisfaction of the Applicable Funding Conditions for this Credit Facility

Commitment Termination Date: the earliest to occur of (a) March 31, 2015, (b) an Event of Default, or (c) the Maturity Date.

Minimum Credit Extension Amount: $10,000,000

Permitted Purpose: not applicable.

Credit Facility #3:

Credit Facility and Type: Term, Tranche 3

Lenders for and their respective Applicable Commitments to this Credit Facility:

Lender		Applicable Commitment
MidCap Financial SBIC, LP	$	7,000,000
Square 1 Bank	$	3,000,000

The following defined terms apply to this Credit Facility:

Applicable Funding Condition: means that (1) A "**Qualifying IPO**" (as defined below) has occurred, (2) the Warrants — Tranche 3 have been, or contemporaneously with the Credit Extension will be, duly executed and delivered to Agent, together with evidence reasonably satisfactory to Agent that the Warrants — Tranche 3 have been duly authorized and issued by all necessary corporate and shareholder action of Borrower, (3) Agent has received a completed Credit Extension Form, in accordance with **Section 2.3(a)** and (4) Borrower has drawn all of Tranche 2 or the Tranche 2 Commitment Termination Date has occurred.

Applicable Interest Rate: means (a) eight and fifty hundredths percent (8.50%) per annum with respect to the MidCap Obligations, and (b) five and twelve hundredths percent (5.12%) per annum with respect to the Square 1 Obligations (which, collectively, constitutes a blended interest rate of seven and forty-nine hundredths percent (7.49%) per annum).

Qualifying IPO: means Borrower's initial, firm-commitment underwritten offering and sale of its Common Stock to the public pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in total aggregate net cash proceeds actually received by Borrower (net of any and all underwriter and/or investment banker fees, commissions and discount and any and all fees and disbursement of counsel and/or independent certified public accounts, and exclusive of any and all proceeds received by the Company pursuant to the exercise of any underwriter's over-allotment or "Green Shoe" option) of at least $50,000,000 (subject to no clawback, escrow or other terms limiting Borrower's ability to freely use such proceeds) from such Qualifying IPO and shall have deposited such net cash proceeds into a deposit account with Square 1 subject to a Control Agreement in favor of Agent and shall have delivered to Agent and each Lender evidence reasonably satisfactory to Agent and each Lender of the occurrence of such Qualifying IPO and the deposit of such proceeds.

Applicable Prepayment Fee: means the following amount, calculated as of the date (the "**Accrual Date**") that the Applicable Prepayment Fee becomes payable in the case of prepayments required under the Financing Documents or the date any voluntary prepayment is made: (a) for an Accrual Date on or after the Closing Date through and including the date which is twelve (12) months after the Closing Date, three percent (3.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater); (b) for an Accrual Date on or after the date which is twelve (12) months after the Closing Date through and including the date which is twenty-four (24) months after the Closing Date, two percent (2.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater); and (c) for an Accrual Date after the date which is twenty-four (24) months after the Closing Date through and including the date immediately preceding the Maturity Date, one percent (1.0%) multiplied by the amount of the outstanding principal of the Credit Extension prepaid or required to be prepaid (whichever is greater).

Closed Period: not applicable.

Commitment Commencement Date: The later to occur of (a) the Closing Date, or (b) satisfaction of the Applicable Funding Conditions for this Credit Facility.

Commitment Termination Date: the earliest to occur of (a) June 30, 2015, or (b) an Event of Default, or (c) the Maturity Date.

Minimum Credit Extension Amount: $10,000,000
Permitted Purpose: not applicable.

AMORTIZATION SCHEDULE (FOR EACH CREDIT FACILITY)

Commencing on October 1, 2015, and continuing on the first day of each calendar month thereafter, an amount per month equal to the total amount of Credit Extensions made under all Credit Facilities divided by thirty-six (36) months.

POST-CLOSING OBLIGATIONS SCHEDULE

Borrower shall satisfy and complete each of the following obligations, or provide Agent each of the items listed below, as applicable, on or before the date indicated below, all to the satisfaction of Agent in its sole and absolute discretion:

1. On or prior to the fifth (5th) Business Day after the Closing Date, Borrower shall deliver a completed Control Agreement with respect to Borrower's Securities Account numbered 19-SQ19041 maintained with U.S. Bank National Association.

2. On or prior to the fifth (5th) Business Day after the Closing Date (subject to any extensions as may be granted by Agent in its sole discretion in writing), Borrower shall deliver to Agent evidence that it has closed the Designated SVB Securities Account and transferred all securities and other funds maintained in the Designated SVB Securities Account to Borrower's Securities Account numbered 19-SQ19041 maintained with U.S. Bank National Association.

3. On or prior to September 27, 2014, Borrower shall deliver to Agent a completed Access Agreement executed by Borrower, Agent and the landlord, in respect of Borrower's facilities located at the second (2nd) floor of Building No. 1400 at One Kendall Square, Cambridge, Massachusetts 02139.

4. On or prior to November 27, 2014 (subject to any extensions as may be granted by Agent in its sole discretion in writing), Borrower shall deliver to Agent evidence that it has closed the Designated SVB Deposit Account and transferred all funds maintained in the Designated SVB Deposit Account to the Borrower's Deposit Accounts maintained with Square 1; provided, that, until such time as Borrower closes the Designated SVB Deposit Account, the amount on deposit therein shall not exceed the lesser of (i) the amount necessary to cover checks that are outstanding on or prior to the Closing Date and (ii) $500,000 for the first 30 days following the Closing Date, $100,000 for the 31st through the 60th day following the Closing Date, and $50,000 for 61st day following the Closing Date through November 27, 2014.

Borrower's failure to complete and satisfy any of the above obligations on or before the date indicated above, or Borrower's failure to deliver any of the above listed items on or before the date indicated above, shall constitute an immediate and automatic Event of Default.

CLOSING DELIVERIES SCHEDULE

1. duly executed original signatures to the Financing Documents to which Borrower is a party.
2. duly executed original signatures to the Control Agreements with Square 1 Bank;
3. duly executed original Secured Promissory Notes in favor of each Lender with a face amount equal to such Lender's Applicable Commitment under each Credit Facility;
4. the Operating Documents of Borrower and good standing certificates of Borrower certified by the Secretary of State of the state(s) of organization of Borrower as of a date no earlier than thirty (30) days prior to the Closing Date;
5. good standing certificates dated as of a date no earlier than thirty (30) days prior to the Closing Date to the effect that Borrower is qualified to transact business in all states in which the nature of Borrower's business so requires;
6. duly executed original signatures to the completed Borrowing Resolutions for Borrower;
7. certified copies, dated as of a recent date, of financing statement searches, as Agent shall request, accompanied by written evidence (including any UCC termination statements) that the Liens indicated in any such financing statements either constitute Permitted Liens or have been or, in connection with the initial Credit Extension, will be terminated or released;
8. the Perfection Certificate executed by Borrower;
9. a landlord's consent executed in favor of Agent in respect of Borrower's facilities in - and , and a bailee waiver executed in favor of Agent in respect of the location in (*required for initial Credit Extension and to the extent otherwise required under the Credit Agreement*);
10. a legal opinion of Borrower's counsel dated as of the Closing Date together with the duly executed original signatures thereto (*required for initial Credit Extension*);
11. evidence satisfactory to Agent that the insurance policies required by **Article 6** are in full force and effect, together with appropriate evidence showing loss payable and/or additional insured clauses or endorsements in favor of Agent, for the ratable benefit of the Lenders;
12. payment of the fees and expenses of Agent and Lenders then accrued, including pursuant to the Fee Letters;
13. a duly executed original Secretary's Certificate dated as of the Closing Date which includes copies of the completed Borrowing Resolutions for Borrower;
14. timely receipt by the Agent of an executed disbursement letter;
15. a certificate executed by a Responsible Officer of Borrower, in form and substance satisfactory to Agent, which shall, among other things, certify as to certain conditions to the funding of the Credit Extensions on the Closing Date (*required for initial Credit Extension*);
16. Registration Rights Agreement/Investors' Rights Agreement, Shareholders Agreement and any amendments thereto; and
17. the Warrants — Tranche 1 (*required for initial* Credit *Extension*).

DISCLOSURE SCHEDULE

Scheduled Permitted Liens

None.

Debtor	Secured Party	Collateral	State and Jurisdiction	Filing Date and Number (include original file date and continuations, amendments, etc.)

Scheduled Permitted Indebtedness

None.

Debtor	Creditor	Amount of Indebtedness outstanding as of ,	Maturity Date

Scheduled Permitted Investments

None.

Debtor	Type of Investment	Date	Amount Outstanding as of

Scheduled Material Agreements

Other Party to Contract	Title/Date of Contract
RB Kendall Fee, LLC (now Divco West)	Lease Agreement 12/17/10 amended 12/21/11.
Catalent Pharma Solutions	Various
Cambridge Major Labs	Various
Medpace Clinical Pharmacology, LLC	MSA for clinical services
Spaulding Clinical Research, LLC	MSA for 2003-102 study

Scheduled Litigation

1. N/A

2.

3.

Scheduled ownership interest in any Chattel Paper, letter of credit rights, commercial tort claims, Instruments, documents or investment property

1. N/A

2.

3

INTANGIBLE PROPERTY SCHEDULE

INTELLECTUAL PROPERTY (REGISTRATIONS AND APPLICATIONS)

	Borrower that is Owner of IP	Name / Identifier of IP	Type of IP (e.g., patent, TM, ©, mask work)	Application Number / Registration	Expiration Date if Granted/ Issued/ Registered
1	Catabasis Pharmaceuticals, Inc.	CATB-001/05AU	Patent	2009268610 / 2009268610	July 8, 2029
2	Catabasis Pharmaceuticals, Inc.	CATB-001/05BR	Patent	PI0915536-8	n/a
3	Catabasis Pharmaceuticals, Inc.	CATB-001/05CA	Patent	2,729,186	n/a
4	Catabasis Pharmaceuticals, Inc.	CATB-001/05CL	Patent	24-2011	n/a
5	Catabasis Pharmaceuticals, Inc.	CATB-001/05CN	Patent	200980135113.X	n/a
6	Catabasis Pharmaceuticals, Inc.	CATB-001/05CO	Patent	11.001.289	n/a
7	Catabasis Pharmaceuticals, Inc.	CATB-001/05CR	Patent	20110015	n/a

8	Catabasis Pharmaceuticals, Inc.	CATB-001/05EC	Patent	SP-11-10746	n/a
9	Catabasis Pharmaceuticals, Inc.	CATB-001/05EG	Patent	PCT35/2011	n/a
10	Catabasis Pharmaceuticals, Inc.	CATB-001/05EP	Patent	09790168.0	n/a
11	Catabasis Pharmaceuticals, Inc.	CATB-001/05GT	Patent	A-2011-00006	n/a
12	Catabasis Pharmaceuticals, Inc.	CATB-001/05HK	Patent	11111506.1	n/a
13	Catabasis Pharmaceuticals, Inc.	CATB-001/05HN	Patent	2011-000079	n/a
14	Catabasis Pharmaceuticals, Inc.	CATB-001/05ID	Patent	W00201100328	n/a
15	Catabasis Pharmaceuticals, Inc.	CATB-001/05IL	Patent	210318	n/a
16	Catabasis Pharmaceuticals, Inc.	CATB-001/05IN	Patent	964/DELNP/2011	n/a
17	Catabasis Pharmaceuticals, Inc.	CATB-001/05JP	Patent	2011-517582	n/a
18	Catabasis Pharmaceuticals, Inc.	CATB-001/05KR	Patent	10-2011-7002838	n/a
19	Catabasis Pharmaceuticals, Inc.	CATB-001/05MX	Patent	MX/A/A2011/000273 / 307140	July 8, 2029
20	Catabasis Pharmaceuticals, Inc.	CATB-001/05MY	Patent	PI2011000034	n/a
21	Catabasis Pharmaceuticals, Inc.	CATB-001/05NI	Patent	2011-00013	n/a
22	Catabasis Pharmaceuticals, Inc.	CATB-001/05NZ	Patent	590179 / 590179	July 8, 2029
23	Catabasis Pharmaceuticals, Inc.	CATB-001/05PH	Patent	1-2011-500106 / 1-2011-500106	July 8, 2029
24	Catabasis Pharmaceuticals, Inc.	CATB-001/05RU	Patent	2011104016	n/a
25	Catabasis Pharmaceuticals, Inc.	CATB-001/05SG	Patent	201100093-2	n/a
26	Catabasis Pharmaceuticals, Inc.	CATB-001/05SV	Patent	20110010485	n/a
27	Catabasis Pharmaceuticals, Inc.	CATB-001/05UA	Patent	a201101408	n/a
28	Catabasis Pharmaceuticals, Inc.	CATB-001/05US	Patent	12/499,779 / 8,173,831	Oct. 2, 2029
29	Catabasis Pharmaceuticals, Inc.	CATB-001/05VN	Patent	1-2011-00308	n/a
30	Catabasis Pharmaceuticals, Inc.	CATB-001/05ZA	Patent	2011/00179 / 2011/00179	July 8, 2029
31	Catabasis Pharmaceuticals, Inc.	CATB-001/06CN	Patent	201410254305.5	n/a
32	Catabasis Pharmaceuticals, Inc.	CATB-001/06CO	Patent	14-019136	n/a
33	Catabasis Pharmaceuticals, Inc.	CATB-001/06EP	Patent	14176625.3	n/a
34	Catabasis Pharmaceuticals, Inc.	CATB-001/06JP	Patent	2014-026425	n/a

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35	Catabasis Pharmaceuticals, Inc.	CATB-001/06MX	Patent	MX/a/2012/013235	n/a
36	Catabasis Pharmaceuticals, Inc.	CATB-001/06MY	Patent	PI 2014000111	n/a
37	Catabasis Pharmaceuticals, Inc.	CATB-001/06NZ	Patent	601932 / 601932	July 8, 2029
38	Catabasis Pharmaceuticals, Inc.	CATB-001/06PH	Patent	1-2013-501319	n/a
39	Catabasis Pharmaceuticals, Inc.	CATB-001/06SG	Patent	201305271-7	n/a
40	Catabasis Pharmaceuticals, Inc.	CATB-001/06UA	Patent	a201406679	n/a
41	Catabasis Pharmaceuticals, Inc.	CATB-001/06US	Patent	12/714,308	n/a
42	Catabasis Pharmaceuticals, Inc.	CATB-001/07MY	Patent	PI2014000111	n/a
43	Catabasis Pharmaceuticals, Inc.	CATB-001/07US	Patent	13/427,654	n/a
44	Catabasis Pharmaceuticals, Inc.	CATB-001/08US	Patent	13/427,650 / 8,735,379	July 8, 2029
45	Catabasis Pharmaceuticals, Inc.	CATB-001/09US	Patent	13/427,644 / 8,729,293	July 8, 2029
46	Catabasis Pharmaceuticals, Inc.	CATB-001/10US	Patent	13/427,639 / 8,735,378	July 8, 2029
47	Catabasis Pharmaceuticals, Inc.	CATB-001/11US	Patent	14/251,247	n/a
48	Catabasis Pharmaceuticals, Inc.	CATB-001/12US	Patent	14/251,257	n/a
49	Catabasis Pharmaceuticals, Inc.	CATB-002/03AR	Patent	20100103208	n/a
50	Catabasis Pharmaceuticals, Inc.	CATB-002/03AU	Patent	2010289683	n/a
51	Catabasis Pharmaceuticals, Inc.	CATB-002/03BR	Patent	1120120046772	n/a
52	Catabasis Pharmaceuticals, Inc.	CATB-002/03CA	Patent	2,772,618	n/a
53	Catabasis Pharmaceuticals, Inc.	CATB-002/03CL	Patent	935-2010	n/a
54	Catabasis Pharmaceuticals, Inc.	CATB-002/03CN	Patent	201080049012.3	n/a
55	Catabasis Pharmaceuticals, Inc.	CATB-002/03CO	Patent	12-036.477	n/a
56	Catabasis Pharmaceuticals, Inc.	CATB-002/03CR	Patent	2012-12648-IP	n/a
57	Catabasis Pharmaceuticals, Inc.	CATB-002/03EC	Patent	SP-12-11709	n/a
58	Catabasis Pharmaceuticals, Inc.	CATB-002/03EG	Patent	PCT 379/2012	n/a
59	Catabasis Pharmaceuticals, Inc.	CATB-002/03EP	Patent	10814349.6	n/a
60	Catabasis Pharmaceuticals, Inc.	CATB-002/03GT	Patent	A2012-000057	n/a
61	Catabasis Pharmaceuticals, Inc.	CATB-002/03HK	Patent	13100544.6	n/a
62	Catabasis Pharmaceuticals, Inc.	CATB-002/03HN	Patent	2012-000453	n/a
63	Catabasis Pharmaceuticals, Inc.	CATB-002/03ID	Patent	W00201201244	n/a
64	Catabasis Pharmaceuticals, Inc.	CATB-002/03IL	Patent	218417	n/a
65	Catabasis Pharmaceuticals, Inc.	CATB-002/03IN	Patent	2661/DELNP/2012	n/a
66	Catabasis Pharmaceuticals, Inc.	CATB-002/03JP	Patent	2012-527967	n/a
67	Catabasis Pharmaceuticals, Inc.	CATB-002/03KR	Patent	10-2012-7008230	n/a
68	Catabasis Pharmaceuticals, Inc.	CATB-002/03MX	Patent	MX/A/2012/002710	n/a
69	Catabasis Pharmaceuticals, Inc.	CATB-002/03MY	Patent	PI 2012000916	n/a
70	Catabasis Pharmaceuticals, Inc.	CATB-002/03NI	Patent	2012-000038	n/a
71	Catabasis Pharmaceuticals, Inc.	CATB-002/03NZ	Patent	599067	n/a
72	Catabasis Pharmaceuticals, Inc.	CATB-002/03PH	Patent	1-2012-500434	n/a
73	Catabasis Pharmaceuticals, Inc.	CATB-002/03RU	Patent	2012112461	n/a
74	Catabasis Pharmaceuticals, Inc.	CATB-002/03SG	Patent	201201472-6	n/a
75	Catabasis Pharmaceuticals, Inc.	CATB-002/03SV	Patent	20120012627	n/a
76	Catabasis Pharmaceuticals, Inc.	CATB-002/03TW	Patent	099129538	n/a
77	Catabasis Pharmaceuticals, Inc.	CATB-002/03UA	Patent	201203931	n/a
78	Catabasis Pharmaceuticals, Inc.	CATB-002/03US	Patent	12/872,555 / 8,304,551	Feb. 16, 2031
79	Catabasis Pharmaceuticals, Inc.	CATB-002/03VN	Patent	1-2012-00889	n/a

80	Catabasis Pharmaceuticals, Inc.	CATB-002/03ZA	Patent	2012/02336 / 2012/02336	Aug. 31, 2030
81	Catabasis Pharmaceuticals, Inc.	CATB-002/04US	Patent	13/427,001 / 8,304,552	Aug. 31, 2030
82	Catabasis Pharmaceuticals, Inc.	CATB-002/05US	Patent	13/451,217 / 8,765,963	Aug. 31, 2030
83	Catabasis Pharmaceuticals, Inc.	CATB-002/06US	Patent	13/437,643	n/a
84	Catabasis Pharmaceuticals, Inc.	CATB-002/07US	Patent	14/143,948 / 8,765,964	Aug. 31, 2030
85	Catabasis Pharmaceuticals, Inc.	CATB-002/08US	Patent	14/278,885	n/a
86	Catabasis Pharmaceuticals, Inc.	CATB-002/09US	Patent	14/108,202	n/a
87	Catabasis Pharmaceuticals, Inc.	CATB-002/10US	Patent	14/108,196	n/a
88	Catabasis Pharmaceuticals, Inc.	CATB-002/11US	Patent	14/258,889	n/a
89	Catabasis Pharmaceuticals, Inc.	CATB-004/02US	Patent	12/898,467	n/a
90	Catabasis Pharmaceuticals, Inc.	CATB-010/02AR	Patent	20110100061	n/a
91	Catabasis Pharmaceuticals, Inc.	CATB-010/02AU	Patent	2011204277	n/a
92	Catabasis Pharmaceuticals, Inc.	CATB-010/02BR	Patent	BR1120120168797	n/a
93	Catabasis Pharmaceuticals, Inc.	CATB-010/02CA	Patent	2,786,605	n/a
94	Catabasis Pharmaceuticals, Inc.	CATB-010/02CL	Patent	01911-2012	n/a
95	Catabasis Pharmaceuticals, Inc.	CATB-010/02CN	Patent	201180012336.4	n/a
96	Catabasis Pharmaceuticals, Inc.	CATB-010/02CO	Patent	12-133089	n/a
97	Catabasis Pharmaceuticals, Inc.	CATB-010/02CR	Patent	2012-0413	n/a
98	Catabasis Pharmaceuticals, Inc.	CATB-010/02EC	Patent	SP-12-12097	n/a
99	Catabasis Pharmaceuticals, Inc.	CATB-010/02EG	Patent	PCT1228/2012	n/a
100	Catabasis Pharmaceuticals, Inc.	CATB-010/02EP	Patent	11732212.3	n/a
101	Catabasis Pharmaceuticals, Inc.	CATB-010/02GT	Patent	A2012-000224	n/a
102	Catabasis Pharmaceuticals, Inc.	CATB-010/02HK	Patent	13105691.6	n/a
103	Catabasis Pharmaceuticals, Inc.	CATB-010/02HN	Patent	2012-001505	n/a
104	Catabasis Pharmaceuticals, Inc.	CATB-010/02ID	Patent	W00201203203	n/a
105	Catabasis Pharmaceuticals, Inc.	CATB-010/02IL	Patent	220822	n/a
106	Catabasis Pharmaceuticals, Inc.	CATB-010/02IN	Patent	6271/DELNP/2012	n/a
107	Catabasis Pharmaceuticals, Inc.	CATB-010/02JP	Patent	2012-548168	n/a
108	Catabasis Pharmaceuticals, Inc.	CATB-010/02KR	Patent	10-2012-7020810	n/a
109	Catabasis Pharmaceuticals, Inc.	CATB-010/02MX	Patent	MX/a/2012/007981	n/a
110	Catabasis Pharmaceuticals, Inc.	CATB-010/02MY	Patent	PI 2012003107	n/a
111	Catabasis Pharmaceuticals, Inc.	CATB-010/02NI	Patent	2012-000120	n/a
112	Catabasis Pharmaceuticals, Inc.	CATB-010/02NZ	Patent	601698	n/a
113	Catabasis Pharmaceuticals, Inc.	CATB-010/02PH	Patent	1-2012-501390	n/a
114	Catabasis Pharmaceuticals, Inc.	CATB-010/02RU	Patent	2012134069	n/a
115	Catabasis Pharmaceuticals, Inc.	CATB-010/02SG	Patent	201205021-7	n/a
116	Catabasis Pharmaceuticals, Inc.	CATB-010/02SV	Patent	20120013322	n/a
117	Catabasis Pharmaceuticals, Inc.	CATB-010/02TW	Patent	100100745	n/a
118	Catabasis Pharmaceuticals, Inc.	CATB-010/02UA	Patent	201209621	n/a
119	Catabasis Pharmaceuticals, Inc.	CATB-010/02VN	Patent	1-2012-02352	n/a
120	Catabasis Pharmaceuticals, Inc.	CATB-010/02ZA	Patent	2012/05990	n/a
121	Catabasis Pharmaceuticals, Inc.	CATB-010/03US	Patent	13/673,588	n/a
122	Catabasis Pharmaceuticals, Inc.	CATB-012/01US	Patent	13/582,932	n/a
123	Catabasis Pharmaceuticals, Inc.	CATB-013/05US	Patent	13/581,392	n/a
124	Catabasis Pharmaceuticals, Inc.	CATB-014/01US	Patent	13/636,020	n/a
125	Catabasis Pharmaceuticals, Inc.	CATB-018/01CN	Patent	201280024126.1	n/a
126	Catabasis Pharmaceuticals, Inc.	CATB-018/01EP	Patent	12761015.2	n/a
127	Catabasis Pharmaceuticals, Inc.	CATB-018/01US	Patent	14/006,037	n/a
128	Catabasis Pharmaceuticals, Inc.	CATB-020/01US	Patent	13/439,168	n/a
129	Catabasis Pharmaceuticals, Inc.	CATB-021/01US	Patent	13/464,435	n/a
130	Catabasis Pharmaceuticals, Inc.	CATB-023/01EP	Patent	12776652.5	n/a
131	Catabasis Pharmaceuticals, Inc.	CATB-023/01US	Patent	13/458,494	n/a
132	Catabasis Pharmaceuticals, Inc.	CATB-025/02US	Patent	13/874,993	n/a
133	Catabasis Pharmaceuticals, Inc.	CATB-025/02WO	Patent	PCT/US2013/039103	n/a
134	Catabasis Pharmaceuticals, Inc.	CATB-028/02CA	Patent	2,847,418	n/a
135	Catabasis Pharmaceuticals, Inc.	CATB-028/02EP	Patent	12828585.5	n/a
136	Catabasis Pharmaceuticals, Inc.	CATB-028/02US	Patent	13/601,344	n/a
137	Catabasis Pharmaceuticals, Inc.	CATB-030/01US	Patent	13/712,544	n/a
138	Catabasis Pharmaceuticals, Inc.	CATB-030/03US	Patent	14/206,845	n/a
139	Catabasis Pharmaceuticals, Inc.	CATB-031/03US	Patent	62/003,213	n/a
140	Catabasis Pharmaceuticals, Inc.	CATB-032/01WO	Patent	PCT/US2014/042542	n/a
141	Catabasis Pharmaceuticals, Inc.	CATB-033/03AR	Patent	20130101843	n/a
142	Catabasis Pharmaceuticals, Inc.	CATB-033/03TH	Patent	1301002797	n/a
143	Catabasis Pharmaceuticals, Inc.	CATB-033/03TW	Patent	102118590	n/a
144	Catabasis Pharmaceuticals, Inc.	CATB-033/03US	Patent	13/902,360	n/a
145	Catabasis Pharmaceuticals, Inc.	CATB-033/03VE	Patent	00631-2013	n/a
146	Catabasis Pharmaceuticals, Inc.	CATB-033/03WO	Patent	PCT/US2013/042693	n/a
147	Catabasis Pharmaceuticals, Inc.	CATB-035/01WO	Patent	PCT/US2014/010515	n/a
148	Catabasis Pharmaceuticals, Inc.	CATB-TM1	Trademark	77521588 / 3716337	n/a

INTANGIBLE PROPERTY SCHEDULE (*CONTINUED*)

LICENSE AND SIMILAR AGREEMENTS

None (other than over-the-counter software that is commercially available to the public).

LICENSE # 1 [COMPLETE FOR EACH AGREEMENT]

Name and Date of License Agreement:
Borrower that is Licensee:
Name and address of Licensor:
Expiration Date of License
Exclusive License [Y/N]?
Restrictions on: **Right to Grant a Lien [Y/N]?**
Right to Assign [Y/N]?
Right to Sublicense [Y/N]?

Describe Licensed Intellectual Property For This License

Name / Identifier of IP	Type of IP (e.g., patent, TM, ©, mask work)	Registration/ Publication or Application Number	Expiration Date

PERMITTED LICENSES:

None.

PERMITTED LICENSE # 1 [COMPLETE FOR EACH AGREEMENT]

Name and Date of License Agreement:
Borrower that is Licensor:
Name and address of Licensee:
Expiration Date of License
Exclusive License [Y/N]?
Restrictions on: **Right to Grant a Lien [Y/N]?**
Right to Assign [Y/N]?
Right to Sublicense [Y/N]?

Describe Licensed Intellectual Property For This License

Name / Identifier of IP	Type of IP (e.g., patent, TM, ©, mask work)	Registration/ Publication or Application Number	Expiration Date

PRODUCTS SCHEDULE

1. CAT-2003
2. CAT-2054
3. CAT-1004

REQUIRED PERMITS SCHEDULE

INDs and CTAs

CAT-1004

US IND # 112732 that is open in the Division of Metabolism and Endocrinology Products (DMEP) and has been updated through Serial 0010

US IND #123319 that is not an open IND but is an open PIND in the Division of Neurology Products (DNP) with Sequence 0000

Serial refers always to an open IND and Sequence always refers to a preIND or PIND

CAT-2003

US IND #116405 that is open in the Division of Metabolism and Endocrinology Products (DMEP) and has been updated through Serial 0011

Health Canada we have an open CTA: CAT-2003 File #: 9427-C3072-21C to study CAT-2003 in the 203 trial Control #: 171734 we have filed 2 amendments to this CTA and are now filing our 3rd Amendment

Other

City of Cambridge - Flammable materials permit
Cambridge Dept. of Public Health — Laboratory biosafety permit
Commonwealth of MA Radiation Ctrl - Radioactive Materials License
Commonwealth of MA DEP — hazardous waste materials
USDA import permits for EPA and DHA

EXHIBIT 1, SHEET 1
Building No. 1400, One Kendall Square
Cambridge, Massachusetts
(the "Building")

Execution Date:	December 17, 2010
Tenant:	Catabasis Pharmaceuticals, Inc., a Delaware corporation
Mailing Address:	Prior to the Specified Commencement Date: 161 First Street, Suite I A, Cambridge, MA 02142
	From and after the Specified Commencement Date: Building No. 1400, Suite B14202, One Kendall Square, Cambridge, MA 02142
Landlord:	RB Kendall Fee, LLC
Mailing address:	c/o The Beal Companies LLP, 177 Milk Street, Boston, Massachusetts 02109 Attn: Senior Vice President - Asset Management
Building:	Building No. 1400 in One Kendall Square in the City of Cambridge, Middlesex County, Commonwealth of Massachusetts

Art. 2 Premises: An area on the second (2nd) floor of the Building, substantially as shown on Lease Plan, Exhibit 2

Art. 3.1 Term Commencement Date: The day Landlord delivers the Premises with Tenant's Improvements Substantially Completed (as hereinafter defined).

Art 3.1 Rent Commencement Date: The date that is two (2) months following the Term Commencement Date.

Art 3.1 Specified Commencement Date: April 15, 2011

Art. 3.2 Termination Date: The date that is sixty-two (62) months following the Term Commencement Date

Art. 5 Use of Premises: Laboratory, research and development (but excluding a vivarium) and general office use and for no other purposes in accordance with the terms of the Lease

Art. 6 Yearly Rent/Monthly Payment:

Time Period	Yearly Rent	Monthly Rent	P.S.F.
Term Commencement Date through the end of the second (2nd) full month following the Term Commencement Date	$ 0	$ 0	$ 0
Month 3 through Month 14	$ 447,994.00	$ 37,332.83	$ 46.00
Month 15 through Month 26	$ 457,733.00	$ 38,144.42	$ 47.00
Month 27 through Month 38	$ 467,472.00	$ 38,956.00	$ 48.00
Month 39 through Month 50	$ 477,211.00	$ 39,767.58	$ 49.00
Month 51 through Month 62	$ 486,950.00	$ 40,579.17	$ 50.00

Art. 7 Total Rentable Area: 9,739 square feet

Total Rentable Area of Building No. 1400: 129,220 square feet

Total Rentable Area of Complex: 639,586 square feet

Art. 8 Electric current will be furnished by Landlord to Tenant

Art. 9 Operating and Taxes:

Tenant's Proportionate Common Share: 1.52%
Tenant's Proportionate Building Share: 7.54%

Art. 29.3 Broker: CB Richard Ellis/New England for Tenant and FHO Partners for Landlord

Art. 29.5 Arbitration: Massachusetts; Superior Court

Art. 29.13 Security Deposit: $113,098.06 in the form of a Letter of Credit in accordance with Article 29.13

Art. 29.14 Parking Spaces: Nine (9) spaces

Art. 29.15 Option to Extend Term: One (1) additional five (5) year period

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THIS INDENTURE OF LEASE made and entered into on the Execution Date as stated in Exhibit 1 and between the Landlord and the Tenant named in Exhibit 1.

Landlord does hereby demise and lease to Tenant, and Tenant does hereby hire and take from Landlord, the premises hereinafter mentioned and described (hereinafter referred to as "Premises"), upon and subject to the covenants, agreements, terms, provisions and conditions of this Lease for the term hereinafter stated:

1. REFERENCE DATA

Each reference in this Lease to any of the terms and titles contained in any Exhibit attached to this Lease shall be deemed and construed to incorporate the data stated under that term or title in such Exhibit.

2. DESCRIPTION OF DEMISED PREMISES

2.1 Demised Premises. The Premises are that portion of the Building as described in Exhibit 1 (as the same may from time to time be constituted after changes therein, additions thereto and eliminations therefrom pursuant to rights of Landlord hereinafter reserved) and is hereinafter referred to as the "Building", substantially as shown hatched or outlined on the Lease Plan (Exhibit 2) hereto attached and incorporated by reference as a part hereof. Landlord reserves the right, at Landlord's own cost and expense (including, but not limited to, all of Tenant's verifiable and documented direct and indirect costs and expenses incurred in connection with such move), but not more than once during the initial term of the Lease, to require Tenant, upon not less than one hundred twenty (120) days' notice, to relocate its Premises elsewhere in the Building or Complex of which the Building is a part, to an area of substantially equivalent size, construction and finish designated by Landlord and reasonably acceptable to Tenant; provided, however, in the event Landlord notifies Tenant that Landlord intend to move Tenant, and such move would be conducted within twenty-four (24) months of the expiration of the term of this Lease, Tenant shall have the option to terminate this Lease rather than agree to such proposed move. Any dispute between the parties as to whether the area designated by Landlord is "substantially equivalent" shall be submitted to arbitration pursuant to Article 29.5 hereof.

2.2 Appurtenant Rights. Tenant shall have, as appurtenant to the Premises, rights to use in common, with others entitled thereto, subject to reasonable rules and regulations from time to time made by Landlord of which Tenant is given notice; (a) the common lobbies, hallways, stairways and elevators of the Building, serving the Premises in common with others, (b) common walkways necessary for access to the Building, and (c) if the Premises include less than the entire rentable area of any floor, the common toilets and other common facilities of such floor; and no other appurtenant rights or easements. Notwithstanding anything to the contrary herein or in the Lease contained, Landlord has no obligation to allow any particular telecommunication service provider to have access to the Building or to Tenant's Premises; *provided however*, that upon reasonable request Landlord agrees to provide access to any nationally-recognized telecommunication service provider engaged by Tenant. If Landlord permits such access. Landlord may condition such access upon the payment to Landlord by the service provider of fees assessed by Landlord in its sole discretion. Tenant shall have the right to use, in common with others entitled thereto (which use shall be subject to Landlord's rules and regulations), a shared a

pH neutralization system and RODI system. Tenant shall pay its pro rata share of the costs associated with such shared equipment. Tenant shall have the right to use 50kw of capacity from an existing emergency generator on a non-exclusive basis in common with other tenants in the Building. Landlord shall perform all necessary maintenance and repair to the generator to keep such generator in good working order and repair at all times and Tenant shall share with other tenants having shared use of the generator in the maintenance and operating costs in connection with the generator.

2.3 Exclusions and Reservations. All the perimeter walls of the Premises except the inner surfaces thereof, any balconies (except to the extent same are shown as part of the Premises on the Lease Plan (Exhibit 2)), terraces or roofs adjacent to the Premises, and any space in or adjacent to the Premises used for shafts, stacks, pipes, conduits, wires and appurtenant fixtures, fan rooms, ducts, electric or other utilities, sinks or other Building facilities, and the use thereof, as well as the right of access through the Premises for the purposes of operation, maintenance, decoration and repair, are expressly excluded from the Premises and reserved to Landlord.

3. TERM OF LEASE

3.1 Definitions. As used in this Lease the words and terms which follow mean and include the following:

(a) "Specified Commencement Date" - The date (as stated in Exhibit 1) on which it is estimated that the Premises will be ready for Tenant's occupancy for its use as stated in Exhibit 1.

(b) "Term Commencement Date" - as defined on Exhibit 1. If the Premises are not ready for such occupancy but if, pursuant to permission therefor duly given by Landlord, Tenant takes possession of the whole or any part of the Premises for use as set forth in Exhibit 1, "Term Commencement Date" shall be the date on which Tenant takes such possession.

(c) "Complex" shall be defined as all of the Building, the other buildings, and the Common Areas serving such buildings, all located on the land ("Land") shown outlined on Exhibit 3.

(d) "Common Areas" shall be defined as the common walkways, accessways, and parking facilities located on the Land and common facilities in the Complex, as the same may be changed, from time to time, including without limitation, alleys, sidewalks, lobbies, hallways, toilets, stairways, fan rooms, utility closets, shaftways, street entrances, elevators, wires, conduits, meters, pipes, ducts, vaults, and any other equipment, machinery, apparatus, and fixtures wherever located on the Land, in the Complex, in the buildings in the Complex or in the Premises that either (a) serve the Premises as well as other parts of the Land or Complex, or (b) serve other parts of the Land or Complex but not the Premises.

3.2 Habendum. TO HAVE AND TO HOLD the Premises for a term of years commencing on the Term Commencement Date and ending at 11:59 p.m. on the last day of the sixty-second (62nd) complete month following the Term Commencement Date (as same may be extended in accordance with Section 29.15 below) or on such earlier date upon which said term may expire or be terminated pursuant to any of the conditions of limitation or other provisions of

this Lease or pursuant to law (which date for the termination of the terms hereof will hereafter be called "Termination Date"). Notwithstanding the foregoing, if the Termination Date as stated in Exhibit 1 shall fall on other than the last day of a calendar month, said Termination Date shall, at the option of Landlord, be deemed to be the last day of the calendar month in which said Termination Date occurs.

3.3 Declaration Fixing Term Commencement Date. Landlord and Tenant hereby agree to execute a Term Commencement Date Agreement substantially in the form attached hereto as Exhibit 4, or as otherwise reasonably requested by Landlord confirming the actual Term Commencement Date and Termination Date, once same are determined. As soon as may be after the execution date hereof, each of the parties hereto agrees, upon demand of the other party to join in the execution, in recordable form, of a statutory notice, memorandum, etc. of lease. If this Lease is terminated before the term expires, then upon Landlord's request the parties shall execute, deliver and record an instrument acknowledging such fact and the date of termination of this Lease, and Tenant hereby appoints Landlord its attorney-in-fact in its name and behalf to execute such instrument if Tenant shall fail to execute and deliver such instrument within ten business (10) days of Tenant's receipt of Landlord's request therefor. In no event shall this Lease be recorded or filed by Tenant with the Middlesex South Registry of Deeds or Middlesex South Registry District of the Land Court.

4. READINESS FOR OCCUPANCY-TENANT'S IMPROVEMENTS

4.1 Tenant's Improvements.

(a) Landlord and Tenant have mutually agreed to the initial space plan and specifications (collectively, the "Space Plans") for the layout of Tenant's leasehold improvements to the Premises and the scope of work to be completed by Landlord within the Premises and to the base Building systems servicing the Premises (collectively, the "Tenant's Improvements"). Tenant's Improvements shall not include, without limitation, Tenant's furniture, trade fixtures, equipment, personal property, data and communications equipment and cabling (but shall include all life safety equipment and supplemental HVAC equipment in the information technology room in the Premises and one (1) Control Area, as hereinafter defined, within the Premises), and shall be limited to construction as generally laid out and specified on the Space Plans. "Control Areas" are defined as areas in the Building or Complex designated for the storage of chemicals, including but not limited to, Hazardous Materials (as hereinafter defined). Except as otherwise may be expressly provided on the Plans (as hereinafter defined), Tenant acknowledges that Tenant's Improvements will be designed and constructed to the general quality of the design and construction of the Building and in accordance with Landlord's building standards (including but not limited to construction materials, design and finishes) for the Building. The Space Plans are attached hereto as Exhibit 2A.

(b) Based upon the Space Plans, the Landlord shall cause final plans and specifications, sufficient to permit the construction of Tenant's Improvements, to be prepared (the "Plans"), which Plans along with a cost estimate for work shown on the Plans shall be submitted to Tenant for approval, which approval shall not be unreasonably withheld or delayed and shall be deemed given if not disapproved of in writing (with a detailed list of the deficiencies in the Plans) within five (5) days of submittal. Tenant understands and agrees that changes to the Space Plans

or the Plans that may be needed or desired by Tenant, and or the specification by Tenant of any components or finishes that are not building standard or as depicted on the Space Plans or Plans, will be approved by Landlord and incorporated into the Space Plans or Plans only if (1) such changes are not Material Changes (as defined below) or (2) Tenant agrees to pay (as provided below) any net increase in the cost of the Tenant's Improvements resulting from such changes and be responsible for any resulting delay in Substantial Completion. The term "Material Changes" as used herein are (i) changes that, individually or in the aggregate, modify the scope, cost or character of the Tenant's Improvements or any material component thereof from that set forth in the Space Plans or Plans, and (ii) changes that will, individually or in the aggregate, in Landlord's reasonable opinion, result in a likelihood of delay in the Substantial Completion of Tenant's Improvements. Tenant agrees that any additional cost or expense resulting from any Material Changes approved by Landlord, as well as from any changes requested by Tenant to the Tenant's Improvements after the date hereof (including design and construction costs, including, but not limited to, materials, labor and general conditions costs) shall be the responsibility of Tenant and shall be paid in full, or reimbursed, as the case may be, by Tenant to Landlord within ten (10) business days of billing therefor by Landlord and Tenant agrees that if any such changes do result in delay in Substantial Completion, same shall be deemed a Tenant Delay (as defined below).

(c) If, after the Plans are finalized, Landlord is thereafter notified that additional expenditures in excess of the final cost estimate are required to complete Tenant's Improvements Landlord will provide Tenant with the estimate of such additional expense for Tenant's approval. Tenant shall approve or disapprove the same within five (5) business days of receipt of Landlord's notice. Landlord and Tenant shall work in good faith to agree upon a mutually acceptable change order to reduce such additional costs so the total cost of the Tenant's Improvements is equal to or below the Improvement Allowance (as hereinafter defined). If no response is received by Landlord within said time frame then Landlord may elect to either (i) go forward and complete that portion of the Tenant's Improvements and deem the additional expenditure approved by Tenant (in which case such additional expenditure to be paid for by Tenant in the same manner as those relating to Material Changes as set forth in subparagraph (b) above) or (ii) not complete that portion of the Tenant's Improvements . If Tenant disapproves the additional expenditure then Landlord shall have no obligation to complete that portion of the Tenant's Improvements. In no event shall Landlord be responsible or liable for any proposed changes in design based on Tenant's value engineering. In no event shall Landlord be obligated to pay for any additional expenditures relating to changes in the scope of Tenant's Improvements as contemplated in the Space Plans or in excess of the Improvement Allowance (as hereinafter defined).

(d) Landlord shall proceed to construct Tenant's Improvements at Landlord's sole cost and expense (except as otherwise set forth herein and not to exceed the Improvement Allowance) in substantial conformance with the Plans and in a good and workmanlike manner. Landlord reserves the right to make changes and substitutions to the Plans in connection with the construction of Tenant's Improvements, provided same do not materially adversely modify the Plans and Tenant agrees to not unreasonably withhold or delay its consent to any changes that do not materially adversely modify the Plans. Tenant's Improvements shall be constructed and completed by Landlord's contractor, in compliance with all applicable statutes and regulations.

(e) Landlord agrees to use reasonable speed and diligence to Substantially Complete Tenant's Improvements by the Specified Commencement Date, provided, however, the failure to do so shall in no way affect the validity of this Lease or the obligations of Tenant hereunder nor shall the same be construed in any way to extend the term of this Lease and Tenant shall not have any claim against Landlord, and Landlord shall have no liability to Tenant, by reason thereof.

(f) Tenant's Improvements shall be deemed "Substantially Complete" on the date (the "Substantial Completion Date") as of all approvals necessary to legally occupy the Premises (including a Certificate of Occupancy, either temporary or permanent, if applicable, or all required "sign-offs" or approvals necessary therefor) have been received from the City of Cambridge (the "Certificate of Occupancy") or Tenant receives Landlord's architect's certificate that the Premises are substantially completed in accordance with the Plans (subject only to the completion of Punchlist Work (defined below)). Any Punchlist Work not fully completed (of which Tenant shall give Landlord notice as provided below) on the Term Commencement Date shall thereafter be so completed with reasonable diligence by Landlord. Notwithstanding the foregoing, if any delay in the Substantial Completion of the Tenant's Improvements by Landlord is due to Tenant Delays, then the Substantial Completion Date shall be deemed to be the date Tenant's Improvements would have been Substantially Complete, if not for such Tenant Delays, as reasonably determined by Landlord. "Tenant Delays" shall mean delays caused by: (i) any material change in the Space Plans or Plans requested by Tenant; (ii) any request by Tenant for a delay in the commencement or completion of Tenant's Improvements for any reason; or (iii) any other act or omission of Tenant or its employees, agents or contractors which reasonably inhibits the Landlord from timely completing the Tenant's Improvements. For purposes hereof, "Punchlist Work" is defined as minor or insubstantial details or defects of construction, decoration or mechanical adjustments that do not significantly affect Tenant's use of the Premises for the Permitted Use. If as a result of Tenant Delays the Premises are deemed ready for Tenant's occupancy, pursuant to the foregoing (and the Term shall have commenced by reason thereof), but the Premises are not in fact actually ready for Tenant's occupancy, Tenant shall not (except with Landlord's consent not to be unreasonably withheld, conditioned or delayed) be entitled to take possession of the Premises for use as set forth in Exhibit 1 until the Premises are in fact actually ready for such occupancy.

(g) Within seven (7) business days after the Term Commencement Date, Landlord and Tenant shall confer and create a specific list of any Punchlist Work remaining items of work with respect to Tenant's Improvements (a "Punchlist"). Except with respect to the items contained in the Punchlist, Tenant shall be deemed satisfied with Tenant's Improvements, Landlord shall be deemed to have completed all of its obligations under this Section 4.1 and Tenant shall have no claim that Landlord has failed to perform in full its obligations hereunder.

(h) This Lease is subject to the Landlord obtaining all permits, licenses and approvals necessary to allow Landlord to construct Tenant's Improvements and obtaining a Certificate of Occupancy, if applicable, with respect thereto; and if despite Landlord's good faith efforts Landlord shall be unable to obtain such permits, license, approvals, or Certificate of Occupancy (if applicable), and is therefore unable to commence or complete Tenant's Improvements, then this lease may be terminated by Landlord or Tenant by written notice being provided to the other party.

(i) In the event that Landlord either fails to commence the Tenant's Improvements in a timely manner following the execution of this Lease or, after commencing the Tenant's Improvements, Landlord, in Tenant's commercially reasonable opinion, substantially discontinues its work to complete the Tenant's Improvements in accordance with the terms of this Lease (and such failure or discontinuance is not the result of a Tenant Delay or force majeure), and, after failing to cure such failure within five (5) business days of receiving a written request from Tenant to commence or recommence such work, as the case may be (a "Landlord TI Default"), Tenant shall have the option, but not the obligation, to begin or continue the Tenant's Improvements at Landlord's sole cost and expense but not to exceed the amount of the Improvement Allowance. In the event Tenant is working on the Tenant's Improvements pursuant to this Section 4.1(i): (a) Landlord hereby authorizes and instructs all involved parties (including, but not limited to, architects, engineers and contractors (whether under contract with Landlord or not) to work with Tenant on the same terms and conditions as such parties were previously working with Landlord on the Tenant's Improvements, and (b) Landlord agrees to provide all reasonable assistance to transition the performance of the Tenant's Improvements to Tenant so as to minimize any delay in the Specified Commencement Date. For the avoidance of doubt, in the event of a Landlord TI Default, Tenant shall have no obligation to complete the Tenant's Improvements pursuant to this Section 4.1(i). Nothing contained in this Section 4.1(i) releases Landlord from its obligation to complete the Tenant's Improvements as set forth in this Lease.

(j) In order to secure Landlord's obligations to complete the Tenant's Improvements under this Lease, Landlord shall deliver to Tenant, on the date that Landlord executes and delivers the Lease to Tenant, either (a) an Irrevocable Standby Letter of Credit ("Letter of Credit") which shall be (1) in a form reasonably satisfactory to Tenant, (2) issued by a bank reasonably acceptable to Tenant with minimum assets of Ten Billion Dollars ($10,000,000,000.00), upon which presentment may be made in Boston, Massachusetts, (3) in an amount equal to the Improvement Allowance (as hereinafter defined); and (4) for a term of not less than nine (9) months; (b) a completion bond in a form reasonably satisfactory to Tenant to ensure the completion of the Tenant's Improvements up to the amount of the Improvement Allowance and naming Tenant as a co-obligee; (c) an amount equal to the Improvement Allowance to be held in escrow by a mutually agreeable escrow agent under the terms of a mutually agreeable escrow agreement or (d) such other alternate form of security as may be reasonably satisfactory to Tenant. The election of the form of security shall be at Landlord's option provided that the conditions set forth in this Section 4.1(i) are satisfied. In the event of a Landlord TI Default, the Tenant shall have the right, at any time after such event, without giving any further notice to Landlord, to draw down from said Letter of Credit, escrow account, bond or alternate security as the case may be for the purposes of Tenant completing the Tenant's Improvements pursuant to Section 4(i) of the Lease. Landlord hereby covenants and agrees not to oppose, contest or otherwise interfere with any attempt by Tenant to draw down from said surety instruments including, without limitation, by commencing an action seeking to enjoin or restrain Tenant from drawing upon said instruments.

4.2 Improvement Allowance. Landlord shall pay the costs and expenses incurred by Landlord in connection with the performance and completion of Tenant's Improvements (including but not limited to the cost of all architectural plans, construction drawings and design specifications) in an amount not to exceed One Million Five Hundred Fifty-Eight Thousand Two Hundred and Forty and 00/100 Dollars ($1,558,240.00) ($160.00 per rentable square feet of Premises) (the "Improvement Allowance"). Tenant shall be responsible for and promptly (but in

no event longer than ten (10) business days after request therefore) pay directly or pay to Landlord for, as appropriate, and indemnify and reimburse Landlord from and against, any actual costs of Tenant's Improvements that are in excess of the Improvement Allowance including without limitation such costs resulting from Material Changes to the Space Plans or Plans. Notwithstanding the foregoing, in the event the total cost of the Tenant's Improvements based on the Space Plans exceeds the Improvement Allowance, Tenant may elect to amortize the payment of the excess cost (up to a maximum amount of an additional $10.00 per rentable square foot of the Premises), together with interest accruing thereon in the amount of 6.5% over the term of the Lease, in equal monthly payments. Any excess above the $10.00 per rentable square foot of the Premises shall be paid promptly by Tenant as set forth in this Section 4.2. In the event the total cost of the

Tenant's Improvements based on the Space Plans is less than the Improvement Allowance, Tenant shall have the right to utilize up to a maximum amount of $4.00 per rentable square foot of the Premises of such savings towards the cost of Tenant's information technology infrastructure, cabling and wiring. Landlord will pay such amount to Tenant after receipt of written request from Tenant along with such documentation relating to such expenses as landlord may reasonably require including, without limitation, invoices and lien waivers.

4.3 Tenant Payments of Construction Costs. Landlord shall have the same rights and remedies which Landlord has upon the nonpayment of Yearly Rent and other charges due under this Lease for nonpayment of any amounts which Tenant is required to pay to Landlord or Landlord's contractor in connection with the construction and initial preparation of the Premises (including, without limitation, any amounts which Tenant is required to pay in accordance with this Article 4).

5. USE OF PREMISES

5.1 Permitted Use. Tenant shall continuously during the term hereof occupy and use the Premises only for the purposes as stated in Exhibit 1 and for no other purposes. Service and utility areas (whether or not a part of the Premises) shall be used only for the particular purpose for which they were designed. Without limiting the generality of the foregoing, Tenant agrees that it shall not use the Premises or any part thereof, or permit the Premises or any part thereof to be used for the preparation or dispensing of food, whether by vending machines or otherwise. So long as Tenant complies with the Landlord's reasonable security program for the Building, Tenant shall have access to the Premises twenty-four(24) hours per day, seven (7) days per week, fifty-two (52) weeks per year during the term, except in cases of force majeure, emergencies or closures due to casualties or condemnation or repairs, maintenance or alterations with the Building. Notwithstanding the foregoing, but subject to the other terms and provisions of this Lease, Tenant may, with Landlord's prior written consent, which consent shall not be unreasonably withheld, install at its own cost and expense so-called hot-cold water fountains, coffee makers and so-called Dwyer refrigerator-sink-stove combinations for the preparation of beverages and foods, provided that no cooking, frying, etc., are carried on in the Premises to such extent as requires special exhaust venting, Tenant hereby acknowledging that the Building is not engineered to provide any such special venting.

5.2 Prohibited Uses. Notwithstanding any other provision of this Lease, Tenant shall not use, or suffer or permit the use or occupancy of, or suffer or permit anything to be done in or anything to be brought into or kept in or about the Premises or the Building or any part thereof

(including, without limitation, any materials, appliances or equipment used in the construction or other preparation of the Premises and furniture and carpeting): (i) which would violate any of the covenants, agreements, terms, provisions and conditions of this Lease or that are otherwise applicable to or binding upon the Premises; (ii) for any unlawful purposes or in any unlawful manner; (iii) which, in the reasonable judgment of Landlord shall in any way (a) impair the appearance or reputation of the Building; or (b) impair, interfere with or otherwise diminish the quality of any of the Building services or the proper and economic heating, cleaning, ventilating, air conditioning or other servicing of the Building or Premises, or with the use or occupancy of any of the other areas of the Building, or occasion discomfort, inconvenience or annoyance, or injury or damage to any occupants of the Premises or other tenants or occupants of the Building; or (iv) which is inconsistent with the maintenance of the Building as an office building of the first class in the quality of its maintenance, use, or occupancy. Tenant shall not install or use any electrical or other equipment of any kind which, in the reasonable judgment of Landlord, might cause any such impairment, interference, discomfort, inconvenience, annoyance or injury.

5.3 Licenses and Permits. If any governmental license or permit shall be required for the proper and lawful conduct of Tenant's business, and if the failure to secure such license or permit would in any way affect Landlord, the Premises, the Building or Tenant's ability to perform any of its obligations under this Lease, Tenant, at Tenant's expense, shall duly procure and thereafter maintain such license and submit the same to inspection by Landlord. Tenant, at Tenant's expense, shall at all times comply with the terms and conditions of each such license or permit. Tenant shall furnish all data and information to governmental authorities and Landlord as required in accordance with legal, regulatory, licensing or other similar requirements as they relate to Tenant's use or occupancy of the Premises or the Building.

6. RENT

During the term of this Lease, the Yearly Rent and other charges, at the rate stated in Exhibit 1, shall be payable by Tenant to Landlord by monthly payments, as stated in Exhibit 1, in advance and without demand on the first day of each month for and in respect of such month. The rent and other charges reserved and covenanted to be paid under this Lease shall commence on the Rent Commencement Date. If, by reason of any provisions of this Lease, the rent reserved hereunder shall commence or terminate on any day other than the first day of a calendar month, the rent for such calendar month shall be prorated. The rent and all other amounts payable to Landlord at the address provided in Exhibit 1 to this Lease or, if Landlord shall so direct in writing, to Landlord's agent or nominee, in lawful money of the United States which shall be legal tender for payment of all debts and dues, public and private, at the time of payment, at the office of the Landlord or such place as Landlord may designate, and the rent and other charges in all circumstances shall be payable without any setoff or deduction whatsoever. Rental and any other sums due hereunder not paid on or before the date due shall bear interest for each month or fraction thereof from the due date until paid computed at the annual rate of five percentage (5%) points over the so-called prime rate then currently from time to time charged to its most favored corporate customers by the largest national bank (N.A.) located in the city in which the Building is located, or at any applicable lesser maximum legally permissible rate for debts of this nature.

7. RENTABLE AREA

Total Rentable Area of the Premises, the Building and the Complex are agreed to be the amounts set forth in Exhibit 1. Landlord reserves the right, throughout the term of the Lease, to recalculate the Total Rentable Area of the Building and/or the Complex.

8. SERVICES FURNISHED BY LANDLORD

8.1 Electric Current.

(a) As stated in Exhibit 1, Landlord will either furnish to Tenant, as an incident of this Lease, electric current for the operation of lighting fixtures, the 120-volt electrical outlets and any supplemental electric heating system initially installed in the Premises and Tenant will reimburse Landlord for the cost of such electric current as measured by a separate submeter or checkmeter, as hereinafter set forth, or Landlord will require Tenant to contract with the

company supplying electric current for the purchase and obtaining by Tenant of electric current directly from such company to be billed directly to, and paid for by, Tenant.

(b) If Landlord is providing electric current to Tenant, as aforesaid, then Tenant shall reimburse Landlord for the entire cost of such electric current as follows:

(1) Commencing as of the Term Commencement Date and continuing until the procedures set forth in Paragraph 2 of this Article 8.1(b) are effected, Tenant shall pay to Landlord at the same time and in the same manner that it pays its monthly payments of Yearly Rent hereunder, estimated payments (i.e., based upon Landlord's reasonable estimate) on account of Tenant's obligation to reimburse Landlord for electricity consumed in the Premises.

(2) Periodically after the Term Commencement Date, Landlord shall determine the actual cost of electricity consumed by Tenant in the Premises (i.e. by reading Tenant's sub-meter and by applying an electric rate which shall not exceed the retail rate which would have been payable by Tenant had Tenant obtained electric services directly from the utility company providing electric current to Landlord.) If the total of Tenant's estimated monthly payments on account of such period is less than the actual cost of electricity consumed in the Premises during such period, Tenant shall pay the difference to Landlord within thirty (30) days of when billed therefor. If the total of Tenant's estimated monthly payments on account of such period is greater than the actual cost of electricity consumed in the Premises during such period, Tenant may credit the difference against its next installment of rental or other charges due hereunder, provided that any excess credit shall be repaid to Tenant within a reasonable time following the expiration of the Lease term provided Tenant is not in default under this Lease.

(3) After each adjustment, as set forth in Paragraph 2 above, the amount of estimated monthly payments on account of Tenant's obligation to reimburse Landlord for electricity in the Premises shall be adjusted based upon the actual cost of electricity consumed during the immediately preceding period.

(c) If Landlord is furnishing Tenant electric current hereunder, Landlord, at any time, at its option and upon not less than thirty (30) days' prior written notice to Tenant, may discontinue such furnishing of electric current to the Premises; and in such case Tenant shall contract with the company supplying electric current for the purchase and obtaining by Tenant of electric current directly from such company. In the event Tenant itself contracts for electricity with the supplier, pursuant to Landlord's option as above stated, Landlord shall (i) permit its risers, conduits and feeders to the extent available, suitable and safely capable, to be used for the purpose of enabling Tenant to purchase and obtain electric current directly from such company, (ii) without cost or charge to Tenant, make such alterations and additions to the electrical equipment and/or appliances in the Building as such company shall specify for the purpose of enabling Tenant to purchase and obtain electric current directly from such company, and (iii) at Landlord's expense, furnish and install in or near the Premises any necessary metering equipment used in connection with measuring Tenant's consumption of electric current and Tenant, at Tenant's expense, shall maintain and keep in repair such metering equipment.

(d) Whether or not Landlord is furnishing electric current to Tenant, if Tenant shall require electric current for use in the Premises in excess of such reasonable quantity to be furnished for such use as hereinabove provided and if (i) in Landlord's reasonable judgment, Landlord's facilities are inadequate for such excess requirements or (ii) such excess use shall result in an additional burden on the Building air conditioning system and additional cost to Landlord on account thereof, then, as the case may be, (x) Landlord, upon written request and at the sole cost and expense of Tenant, will furnish and install such additional wire, conduits, feeders, switchboards and appurtenances as reasonably may be required to supply such additional requirements of Tenant if current therefor be available to Landlord, provided that the same shall be permitted by applicable laws and insurance regulations and shall not cause damage to the Building or the Premises or cause or create a dangerous or hazardous condition or entail excessive or unreasonable alterations or repairs or interfere with or disturb other tenants or occupants of the Building or (y) Tenant shall reimburse Landlord for such additional cost, as aforesaid. Tenant acknowledges that it has been provided with an opportunity to confirm that the electric current serving the Premises will be adequate to supply its proposed permitted uses of the Premises.

(e) Landlord, at Tenant's expense and upon Tenant's request, shall purchase and install all replacement lamps of types generally commercially available (including, but not limited to, incandescent and fluorescent) used in the Premises.

(f) Landlord shall not in any way be liable or responsible to Tenant for any loss, damage or expense which Tenant may sustain or incur if the quantity, character, or supply of electrical energy is changed or is no longer available or suitable for Tenant's requirements.

(g) Tenant agrees that it will not make any material alteration or material addition to the electrical equipment and/or appliances in the Premises without the prior written consent of Landlord in each instance first obtained, which consent will not be unreasonably withheld, and using contractor(s) approved by Landlord, and will promptly advise Landlord of any other alteration or addition to such electrical equipment and/or appliances.

8.2 Water. Landlord shall furnish hot and cold water for ordinary Premises, cleaning, toilet, lavatory and drinking purposes. If Tenant requires, uses or consumes water for any

purpose other than for the aforementioned purposes, Landlord may (i) assess a reasonable charge for the additional water so used or consumed by Tenant or (ii) install a water meter and thereby measure Tenant's water consumption for all purposes. In the latter event, Tenant shall pay the cost of the meter and the cost of installation thereof and shall keep said meter and installation equipment in good working order and repair. Tenant agrees to pay for water consumed during the term, as shown on said meter, together with the sewer charge based on said meter charges, as and when bills are rendered, and on default in making such payment Landlord may pay such charges and collect the same from Tenant. All piping and other equipment and facilities for use of water outside the building core will be installed and maintained by Landlord at Tenant's sole cost and expense.

8.3 Elevators, Heat and Cleaning. Landlord shall: (i) provide necessary elevator facilities (which may be manually or automatically operated, either or both, as Landlord may from time to time elect) on Mondays through Fridays, excepting Massachusetts and federal legal holidays, from 8:00 a.m. to 6:00 p.m. and on Saturdays, excepting legal holidays, from 8:00 a.m. to 1:00 p.m. (called "business days") and have one (1) elevator in operation available for Tenant's use, non-exclusively, together with others having business in the Building, at all other times; (ii) furnish heat (substantially equivalent to that being furnished in comparably aged similarly equipped office buildings in the same city) to the Premises during the normal heating season on business days; and (iii) cause the common areas of the Building to be cleaned on Monday through Friday (excepting Massachusetts or City of Cambridge legal holidays) in a manner consistent

with cleaning standards generally prevailing in the comparable office buildings in the City of Cambridge. All costs and expenses incurred by Landlord in connection with foregoing services shall be included as part of the Operating Costs (as defined below). Tenant shall be responsible, at its sole cost and expense, for providing cleaning and janitorial services to the Premises in a neat and first-class manner consistent with the cleaning standards generally prevailing in the comparable buildings in the City of Cambridge or as otherwise reasonably established by Landlord in writing from time to time using an insured contractor or contractors selected by Tenant and [reasonably] approved in writing by Landlord and such provider shall not interfere with the use and operation of the Building or Complex by Landlord or any other tenant or occupant thereof.

8.4 Air Conditioning. Landlord shall through the air conditioning equipment of the Building furnish to and distribute in the Premises air conditioning as normal seasonal changes may require on business days during the hours as aforesaid in Article 8.3 when air conditioning may reasonably be required for the comfortable occupancy of the Premises by Tenant. Tenant agrees to lower and close the blinds or drapes when necessary because of the sun's position, whenever the air conditioning system is in operation, and to cooperate fully with Landlord with regard to, and to abide by all the reasonable regulations and requirements which Landlord may prescribe for the proper functioning and protection of the air conditioning system.

8.5 Additional Heat and Air Conditioning Services. Landlord will use reasonable efforts upon reasonable advance written notice from Tenant of its requirements in that regard, to furnish additional heat or air conditioning services to the Premises on days and at times other than as above provided. Tenant will pay to Landlord a reasonable charge for any such additional heat or air conditioning service required by Tenant. As of the Execution Date, the current charge for such after-hours additional heat and air conditioning services is approximately $55.00 per hour for

the entire Premises. Tenant hereby acknowledges that such charge is subject to reasonable increases from time to time.

8.6 Additional Air Conditioning Equipment. In the event Tenant requires additional air conditioning for business machines, meeting rooms or other special purposes, or because of occupancy or excess electrical loads, any additional air conditioning units, chillers, condensers, compressors, ducts, piping and other equipment, such additional air conditioning equipment will be installed, but only if, in Landlord's reasonable judgment, the same will not cause damage or injury to the Building or create a dangerous or hazardous condition or entail excessive or unreasonable alterations, repairs or expense or interfere with or disturb other tenants. At Landlord's sole election, such equipment will either be installed:

(a) by Landlord at Tenant's expense and Tenant shall reimburse Landlord in such an amount as will compensate it for the cost incurred by it in operating, maintaining, repairing and replacing, if necessary, such additional air conditioning equipment. At Landlord's election, such equipment shall (i) be maintained, repaired and replaced by Tenant at Tenant's sole cost and expense, and (ii) throughout the term of this Lease, Tenant shall, at Tenant's sole cost and expense, purchase and maintain a service contract for such equipment from a service provider approved by Landlord. Tenant shall obtain Landlord's prior written approval of both the form of service contract and of the service provider; or

(b) by Tenant, subject to Landlord's prior approval of Tenant's plans and specifications for such work. In such event: (i) such equipment shall be maintained, repaired and replaced by Tenant at Tenant's sole cost and expense, and (ii) throughout the term of this Lease, Tenant shall, at Tenant's sole cost and expense, purchase and maintain a service contract for such equipment from a service provider approved by Landlord. Tenant shall obtain Landlord's prior written approval of both the form of service contract and of the service provider.

8.7 Repairs. Except as otherwise provided in Articles 18 and 20, and subject to Tenant's obligations in Article 14, Landlord shall keep and maintain the roof, exterior walls, structural floor slabs, columns, elevators, public stairways and corridors, public lavatories, and other common equipment (including, without limitation, sanitary, electrical, heating, air conditioning, or other systems) serving both the Building and the Common Areas in good condition and repair. Landlord shall keep the paved portions of the Common Areas reasonably free of ice and snow.

8.8 Interruption or Curtailment of Services. When necessary by reason of accident or emergency, or for repairs, alterations, replacements or improvements which in the reasonable judgment of Landlord are desirable or necessary to be made, or of difficulty or inability in securing supplies or labor, or of strikes, or of any other cause beyond the reasonable control of Landlord, whether such other cause be similar or dissimilar to those hereinabove specifically mentioned until said cause has been removed, Landlord reserves the right to interrupt, curtail, stop or suspend (i) the furnishing of heating, elevator, air conditioning, and cleaning services and (ii) the operation of the plumbing and electric systems. Landlord shall exercise reasonable diligence to eliminate the cause of any such interruption, curtailment, stoppage or suspension, but there shall be no diminution or abatement of rent or other compensation due from Landlord to Tenant hereunder, nor shall this Lease be affected or any of the Tenant's obligations hereunder reduced, and the

Landlord shall have no responsibility or liability for any such interruption, curtailment, stoppage, or suspension of services or systems. In the event of a planned interruption or curtailment, Landlord shall notify Tenant (which notification may be verbal) in advance; in the event of an emergency or unforeseen interruption or curtailment, Landlord shall endeavor to notify Tenant (which notification may be verbal) in advance if possible.

8.9 Energy Conservation. Notwithstanding anything to the contrary in this Article 8 or in this Lease contained, Landlord may institute, and Tenant shall comply with, such policies, programs and measures as may be necessary, required, or expedient for the conservation and/or preservation of energy or energy services, or as may be necessary or required to comply with applicable codes, rules regulations or standards, provided that Tenant has been notified in writing of all such policies, programs or measures.

8.10 Additional Services. Landlord shall provide, at no additional cost to Tenant (other than as such may already be included in Operating Costs (as defined below)) the following: (a) roving security to the Building and Complex twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year, or such other security measures as Landlord deems appropriate, (b) a dumpster or trash compactor at the Building's loading dock or other designated location for Tenant's use for the disposal of trash (other than the disposal of Hazardous Materials), such use shall be non-exclusive to Tenant and in common with other tenants of the Building and/or Complex, and (c) subject to reasonable notice and scheduling and during normal business hours, access to and use of the Building's freight elevators and (d) in addition to the Control Area within the Premises provided pursuant to Section 4.1(a) of this Lease, upon Tenant's reasonable request and subject to availability, Landlord may make other Control Areas available for Tenant's use in the Building or Complex at the then prevailing market rent for such space. .

9. ESCALATION

9.1 Definitions. As used in this Article 9, the words and terms which follow mean and include the following:

(a) "Operating Year" shall mean a calendar year in which occurs any part of the term of this Lease.

(b) "Tenant's Proportionate Building Share" shall initially be the figure as stated in Exhibit 1. Tenant's Proportionate Building Share is the ratio of the Total Rentable Area of the Premises to the aggregate Total Rentable Area of the Building, from time to time. As changes or modifications to the Building occurs, Tenant's Proportionate Building Share shall be adjusted to equal the then current ratio of the Total Rentable Area of the Premises to the aggregate Total Rentable Area within the Building which is then completed and as to which a certificate of occupancy is issued.

(c) "Tenant's Proportionate Common Share" shall initially be the figure as stated in Exhibit 1. Tenant's Proportionate Common Share is the ratio of the Total Rentable Area of the Premises to the aggregate Total Rentable Area, from time to time, of all buildings within the Complex which have been completed and for which a certificate of occupancy has been issued. As additional buildings are completed within the Complex, Tenant's Proportionate Common

Share shall be adjusted to equal the then current ratio of the Total Rentable Area of the Premises to the aggregate Total Rentable Area within the Complex which is then completed and as to which a certificate of occupancy is issued.

(d) "Taxes" shall mean the real estate taxes and other taxes, levies and assessments imposed upon the Building and the Common Areas of the Complex and upon any personal property of Landlord used in the operation thereof, or Landlord's interest in the Building, the Common Areas, or such personal property; charges, fees and assessments for transit, housing, police, fire or other governmental services or purported benefits to the Building and/or the Common Areas; service or user payments in lieu of taxes; and any and all other taxes, levies, betterments, assessments and charges arising from the ownership, leasing, operating, use or occupancy of the Building, the Common Areas or based upon rentals derived therefrom, which are or shall be imposed by Federal, State, Municipal or other authorities. As of the Execution Date, "Taxes" shall not include any franchise, rental, income or profit tax, capital levy or excise, provided, however, that any of the same and any other tax, excise, fee, levy, charge or assessment, however described, that may in the future be levied or assessed as a substitute for or an addition to, in whole or in part, any tax, levy or assessment which would otherwise constitute " Taxes," whether or not now customary or in the contemplation of the parties on the Execution Date of this Lease, shall constitute "Taxes," but only to the extent calculated as if the Complex is the only real estate owned by Landlord. "Taxes" shall also include expenses of tax abatement or other proceedings contesting assessments or levies. The parties acknowledge that, as of the Execution Date, Taxes are based upon several separate tax bills affecting the Complex. Taxes shall be allocated by Landlord, in Landlord's reasonable judgment, among the Building (the portion of Taxes allocable to the Building being referred to herein as "Building Taxes"), the other buildings of the Complex, and the Common Areas (the portion of Taxes allocable to the Common Areas being referred to herein as "Common Area Taxes").

(e) "Tax Period" shall be any fiscal/tax period in respect of which Taxes are due and payable to the appropriate governmental taxing authority, any portion of which period occurs during the term of this Lease, the first such Period being the one in which the Term Commencement Date occurs.

(f) "Operating Costs":

(1) Definition of Operating Costs. "Operating Costs" shall mean all costs incurred and expenditures of whatever nature made by Landlord in the operation and management, for repair and replacements, cleaning and maintenance of the Building and the Complex, and the Common Areas of the Complex including, without limitation, vehicular and pedestrian passageways related to the Complex, related equipment, facilities and appurtenances, elevators, cooling and heating equipment. In the event that Landlord or Landlord's managers or agents perform services for the benefit of the Complex off-site which would otherwise be performed on-site (e.g., accounting), the cost of such services shall be reasonably allocated among the properties benefiting from such service and shall be included in Operating Costs. Landlord shall have the right but not the obligation, from time to time, to equitably allocate some or all of the Operating Costs among different tenants of the Building or properties (the "Cost Pools"). Such Cost Pools may

include, but shall not be limited to, tenants that share particular systems or equipment or tenants that are similar users of particular systems or equipment such as by way of example but not limitation the office space tenants of the Building or properties, the laboratory tenants of the Building or properties and the retail space tenants of the Building or properties. Operating Costs shall include, without limitation, those categories of "Specifically Included Operating Costs," as set forth below, but shall not include "Excluded Costs," as hereinafter defined.

(2) Definition of Excluded Costs. "Excluded Costs" shall be defined as (i) mortgage charges, (ii) brokerage commissions, (iii) salaries of executives and owners not directly employed in the management/operation of the Complex, (iv) the cost of work done by Landlord for a particular tenant for which Landlord has the right to be reimbursed by such tenant, and, subject to Subparagraph (3) below, such portion of expenditures as are not properly chargeable against income, (v) ground lease rental, (vi) attorneys' fees, leasing commissions and other costs and expenses incurred in connection with negotiations or disputes with present or prospective tenants or other occupants of or persons, firms or entities with respect to the Building, (vii) expenses in connection with services or benefits which are not offered to Tenant, (viii) all items and services for which Tenant or any other tenant reimburses Landlord, outside of Operating Costs, or which Landlord provides exclusively to one or more tenants (other than Tenant) but not all tenants, (ix) electric power and any other utility costs for which any tenant or occupant (except Landlord) directly contracts with the local public service company, (x) the cost to construct any additions or expansions to the Building or Complex,(xi) any reserves for future expenditures not yet incurred, (xii) costs incurred by Landlord due to the gross negligence or misconduct of Landlord or its agents, (xiii) advertising and promotional expenses in connection with the leasing of the Building, (xiv) the costs of remediating or removing Hazardous Materials, as defined in Article 29.11 except: (a) any material or substance which, as of the Execution Date, exists in the Complex, which was not considered, as a matter of law, to be a hazardous substance, but which is subsequently determined to be a hazardous substance as a matter of law or (b) any material or substance which is introduced to the Complex after the Execution Date, but, which was not considered, as a matter of law, to be a hazardous substance as of the time of its introduction to the Building, but which is subsequently determined to be a hazardous substance as a matter of law after its introduction to the Complex. Notwithstanding the foregoing, environmental insurance costs and costs related to remediation, removal or treatment of lead paint or asbestos remediation required in connection with repairs, upgrades or improvements to the Building and/or Complex, the cost of which Landlord shall have the right to pass-through to Tenant as Operating Costs shall be included in Operating Costs and (xv) costs associated with owning, operating or maintaining any parking facility, including without limitation, the Garage (as defined in Section 29.14) for so long as seprate fees are required for use of such facilities and except for costs associated with security for such facilities.

(3) Capital Expenditures.

(i) Replacements. If, during the term of this Lease, Landlord shall replace any capital items or make any capital expenditures (collectively called "capital expenditures") the total amount of which is not properly includible in Operating Costs for the Operating Year in which they were made, there shall nevertheless be included in such Operating Costs and in Operating Costs for each succeeding Operating Year the amount, if any, by which the Annual Charge-Off (determined as hereinafter provided) of such capital expenditure (less insurance proceeds, if any, collected by Landlord by reason of damage to, or destruction of the capital item being replaced) exceeds the Annual Charge-Off of the capital expenditure for the item being replaced.

(ii) New Capital Items. If a new capital item is acquired which does not replace another capital item which was worn out, has become obsolete, etc., then there shall be included in Operating Costs for each Operating Year in which and after such capital expenditure is made the Annual Charge-Off of such capital expenditure.

(iii) Annual Charge-Off. "Annual Charge-Off" shall be defined as the annual amount of principal and interest payments which would be required to repay a loan ("Capital Loan") in equal monthly installments over the Useful Life, as hereinafter defined, of the capital item in question on a direct reduction basis at an annual interest rate equal to the Capital Interest Rate, as hereinafter defined, where the initial principal balance is the cost of the capital item in question. Notwithstanding the foregoing, if Landlord reasonably concludes on the basis of engineering estimates that a particular capital expenditure will effect savings in Building operating expenses including, without limitation, energy-related costs, and that such projected savings will, on an annual basis ("Projected Annual Savings"), exceed the Annual Charge-Off of such capital expenditure computed as aforesaid, then and in such events, the Annual Charge-Off shall be increased to an amount equal to the Projected Annual Savings; and in such circumstances, the increased Annual Charge-Off (in the amount of the Projected Annual Savings) shall be made for such period of time as it would take to fully amortize the cost of the capital item in question, together with interest thereon at the Capital Interest Rate as aforesaid, in equal monthly payments, each in the amount of one-twelfth (1/12th) of the Projected Annual Savings, with such payments being applied first to interest and the balance to principal.

(iv) Useful Life. "Useful Life" shall be reasonably determined by Landlord in accordance with generally accepted accounting principles and practices in effect at the time of acquisition of the capital item.

(v) Capital Interest Rate. "Capital Interest Rate" shall be defined as an annual rate of either one percentage point over the AA Bond rate (Standard & Poor's corporate composite or, if unavailable, its

equivalent) as reported in the financial press at the time the capital expenditure is made or, if the capital item is acquired through third-party financing, then the actual (including fluctuating) rate paid by Landlord in financing the acquisition of such capital item.

(4) Specifically Included Categories of Operating Costs. Operating Costs shall include, but not be limited to, the following:

Taxes (other than real estate taxes): Sales, Federal Social Security, Unemployment and Old Age Taxes and contributions and State Unemployment taxes and contributions accruing to and paid by the Landlord on account of all employees of Landlord and/or Landlord's managing agent, who are employed in, about or on account of the Complex, except that taxes levied upon the net income of the Landlord and taxes withheld from employees, and "Taxes" as defined in Article 9.1(d) shall not be included herein.

Water: All charges and rates connected with water supplied to the Building and related sewer use charges.

Heat and Air Conditioning: All charges connected with heat and air conditioning supplied to the Building.

Wages: Wages and cost of all employee benefits of all employees of the Landlord and/or Landlord's managing agent who are employed in about or on account of the Building.

Cleaning: The cost of labor (including third party janitorial contracts), supplies, tools and material for cleaning the Building and Complex.

Elevator Maintenance: All expenses for or on account of the upkeep and maintenance of all elevators in the Building.

Management Fee: The cost of professional management of the Complex.

Administrative Costs: The cost of office expense for the management of the Complex, including, without limitation, rent, business supplies and equipment.

Electricity: The cost of all electric current for the operation of any machine, appliance or device used for the operation of the Premises and the Building, including the cost of electric current for the elevators, lights, air conditioning and heating, but not including electric current which is paid for directly to the utility by the user/tenant in the Building or for which the user/tenant reimburses Landlord. (If and so long as Tenant is billed directly by the electric utility for its own consumption as determined by its separate meter, or billed directly by Landlord as determined by a check meter, then Operating Costs shall include only Building and public area electric current consumption and not any demised Premises electric current consumption.) Wherever separate metering is unlawful, prohibited by utility company regulation or tariff or is otherwise impracticable, relevant

consumption figures for the purposes of this Article 9 shall be determined by fair and reasonable allocations and engineering estimates made by Landlord.

Insurance, etc.: Fire, casualty, liability, rent loss and such other insurance as may from time to time be required by lending institutions on first-class office buildings in the City or Town wherein the Building is located and all other expenses customarily incurred in connection with the operation and maintenance of first-class office buildings in the City or Town wherein the Building is located including, without limitation, insurance deductible amounts and rental costs associated with the Building's management office.

(5) Definitions of Building Operating Costs and Common Area Operating Costs. "Building Operating Costs" shall be defined as the amount of Operating Costs allocable to the Building in any Operating Year. "Common Area Operating Costs" shall be defined as the amount of Operating Costs allocable to the Common Areas in any Operating Year. All Operating Costs incurred by Landlord in respect of the Complex shall be allocated, in Landlord's reasonable judgment, among the Building, the other buildings of the Complex, and the Common Areas.

(6) Gross-Up Provision. Notwithstanding the foregoing, in determining the amount of Operating Costs for any calendar year or any portion thereof falling within the term, if less than ninety-five percent (95%) of the Rentable Area of the Building shall have been occupied by tenants at any time during the period in question, then, at Landlord's election, Operating Costs for such period shall be adjusted to equal the amount Operating Costs would have been for such period had occupancy been ninety-five percent (95%) throughout such period. The extrapolation of Operating Costs under this paragraph shall be performed by appropriately adjusting the cost of those components of Operating Costs that are impacted by changes in the occupancy of the Building.

9.2 Tax Share. Commencing as of the Term Commencement Date and continuing thereafter with respect to each Tax Year occurring during the term of the Lease, Tenant shall pay to Landlord, with respect to any Tax Period, the sum of: (x) Tenant's Proportionate Building Share of Building Taxes for such Tax Period, plus (y) Tenant's Proportionate Common Share of Common Area Taxes for such Tax Period, such sum being hereinafter referred to as "Tax Share". Tax Share shall be due within thirty (30) days of the date it is billed by Landlord. In implementation and not in limitation of the foregoing, Tenant shall remit to Landlord pro rata monthly installments on account of projected Tax Share, calculated by Landlord on the basis of the most recent Tax data or budget available. If the total of such monthly remittances on account of any Tax Period is greater than the actual Tax Share for such Tax Period, Tenant may credit the difference against the next installment of rental or other charges due to Landlord hereunder. If the total of such remittances is less than the actual Tax Share for such Tax Period, Tenant shall pay the difference to Landlord within thirty (30) days of when billed therefor.

Appropriate credit against Tax Share shall be given for any refund obtained by reason of a reduction in any Taxes by the Assessors or the administrative, judicial or other governmental agency responsible therefor. The original computations, as well as reimbursement or payments of

additional charges, if any, or allowances, if any, under the provisions of this Article 9.2 shall be based on the original assessed valuations with adjustments to be made at a later date when the tax refund, if any, shall be paid to Landlord by the taxing authorities. Expenditures for legal fees and for other similar or dissimilar expenses incurred in obtaining the tax refund may be charged against the tax refund before the adjustments are made for the Tax Period.

9.3 Operating Expense Share. Commencing as of the Term Commencement Date and continuing thereafter with respect to each Operating Year occurring during the term of the Lease, Tenant shall pay to Landlord, with respect to any Operating Year, the sum of: (x) Tenant's Proportionate Building Share of Building Operating Costs for such Operating Year, plus (y) Tenant's Proportionate Common Share of Common Operating Costs for such Operating Year, such sum being hereinafter referred to as "Operating Expense Share". In implementation and not in limitation of the foregoing, Tenant shall remit to Landlord pro rata monthly installments on account of projected Operating Expense Share, calculated by Landlord on the basis of the most recent Operating Costs data or budget available. If the total of such monthly remittances on account of any Operating Year is greater than the actual Operating Expense Share for such Operating Year, Landlord may credit the difference against the next installment of rent or other charges due to Landlord hereunder. If the total of such remittances is less than actual Operating Expense Share for such Operating Year, Tenant shall pay the difference to Landlord when billed therefor. Attached hereto as Exhibit 7 is Landlord's estimated, draft Building operating budget for Operating Year 2011. The foregoing information is provided for informational purposes only and Landlord and Tenant acknowledge that the actual amount of Taxes and Operating Costs may differ from those set forth in the estimated draft budget and nothing shall preclude Landlord from determining Tenant's Proportionate Building and Common Share of Taxes and Operating Costs based upon figures different from those contained therein.

9.4 Part Years. If the Term Commencement Date or the Termination Date occurs in the middle of an Operating Year or Tax Period, Tenant shall be liable for only that portion of the Operating Expense or Tax Share, as the case may be, in respect of such Operating Year or Tax Period represented by a fraction, the numerator of which is the number of days of the herein term which falls within the Operating Year or Tax Period and the denominator of which is three hundred sixty-five (365), or the number of days in said Tax Period, as the case may be.

9.5 Effect of Taking. In the event of any taking of the Building or the land upon which it stands under circumstances whereby this Lease shall not terminate under the provisions of Article 20 then, Tenant's Proportionate Building Share and Tenant's Proportionate Common Share shall be adjusted appropriately to reflect the proportion of the Premises and/or the Building remaining after such taking.

9.6 Tenant Audit Right. Landlord shall permit Tenant, at Tenant's expense and during normal business hours, but only one time with respect to any Operating Year, to review Landlord's invoices and statements relating to the Operating Costs for the applicable Operating Year for the purpose of verifying the Operating Costs and Tenant's share thereof; provided that notice of Tenant's desire to so review is given to Landlord not later than thirty (30) days after Tenant receives an annual statement from Landlord, and provided that such review is thereafter commenced and prosecuted by Tenant with due diligence. Any Operating Costs statement or accounting by Landlord shall be binding and conclusive upon Tenant unless (i) Tenant duly

requests such review within such thirty (30) day period, and (ii) within three (3) months after such review request, Tenant shall notify Landlord in writing that Tenant disputes the correctness of such statement, specifying the particular respects in which the statement is claimed to be incorrect. Tenant shall have no right to conduct a review or to give Landlord notice that it desires to conduct a review at any time Tenant is in default under the Lease. The review shall be completed by a qualified lease auditor approved by Landlord (such approval not to be unreasonably withheld) having at least five (5) years experience. Such auditor conducting the review shall be compensated on an hourly basis and shall not be compensated based upon a percentage of overcharges it discovers. No subtenant shall have any right to conduct a review, and no assignee shall conduct a review for any period during which such assignee was not in possession of the Premises. Tenant

agrees that all information obtained from any such Operating Costs review, including without limitation, the results of any Operating Costs review shall be kept strictly confidential by Tenant and shall not be disclosed to any other person or entity. If, after such review, it is finally determined that: (i) Tenant has made an overpayment of its Operating Expense Share, Landlord shall credit such overpayment against future installments of Yearly Rent, except that is such overpayment is determined after the termination or expiration of the Term, Landlord shall refund to Tenant the amount of any such overpayment less any amounts then due from Tenant to Landlord, and (ii) Tenant has made an underpayment of its Operating Expense Share, Tenant shall within thirty (30) business days of such determination, pay such underpayment to Landlord.

9.7 Survival. Any obligations under this Article 9 which shall not have been paid at the expiration or sooner termination of the term of this Lease shall survive such expiration and shall be paid when and as the amount of same shall be determined to be due.

10. CHANGES OR ALTERATIONS BY LANDLORD

Landlord reserves the right, exercisable by itself or its nominee, at any time and from time to time without the same constituting an actual or constructive eviction and without incurring any liability to Tenant therefor or otherwise affecting Tenant's obligations under this Lease, to make such changes, alterations, additions, improvements, repairs or replacements in or to: (i) the Building (including the Premises after notice to Tenant (which may be oral notice), provided that no prior notice needs to be given in the case of emergency) and the fixtures and equipment thereof, (ii) the street entrances, halls, passages, elevators, escalators, and stairways of the Building, and (iii) the Common Areas, and facilities located therein, as Landlord may deem necessary or desirable, and to change the arrangement and/or location of entrances or passageways, doors and doorways, and corridors, elevators, stairs, toilets, or other public parts of the Building and/or the Common Areas, provided, however, that there be no unreasonable obstruction of the right of access to, or unreasonable interference with the use and enjoyment of, the Premises by Tenant. Nothing contained in this Article 10 shall be deemed to relieve Tenant of any duty, obligation or liability of Tenant with respect to making any repair, replacement or improvement or complying with any law, order or requirement of any governmental or other authority. Landlord reserves the right to adopt and at any time and from time to time to change the name or address of the Building. Neither this Lease nor any use by Tenant shall give Tenant any right or easement for the use of any door, passage, concourse, walkway or parking area within the Building or in the Common Areas, and the use of such doors, passages, concourses, walkways, parking areas and such conveniences may be regulated or discontinued at any time and from time to time by Landlord without notice to

Tenant and without affecting the obligation of Tenant hereunder or incurring any liability to Tenant therefor, provided, however, that there be no unreasonable obstruction of the right of access to, or unreasonable interference with the use of the Premises by Tenant.

If at any time any windows of the Premises are temporarily closed or darkened for any reason whatsoever including but not limited to, Landlord's own acts, Landlord shall not be liable for any damage Tenant may sustain thereby and Tenant shall not be entitled to any compensation therefor nor abatements of rent nor shall the same release Tenant from its obligations hereunder nor constitute an eviction.

11. FIXTURES, EQUIPMENT AND IMPROVEMENTS-REMOVAL BY TENANT

All fixtures, non-moveable or fixed equipment, improvements and appurtenances attached to or built into the Premises prior to or during the term, whether by Landlord at its expense or at the expense of Tenant (either or both) or by Tenant shall be and remain part of the Premises and shall not be removed by Tenant during or at the end of the term unless Landlord otherwise elects to require Tenant to remove such fixtures, equipment, improvements and appurtenances, in accordance with Articles 12 and/or 22 of the Lease. All electric, telephone, telegraph, communication, radio, plumbing, heating and sprinkling systems, fixtures and outlets, vaults, paneling, molding, shelving, radiator enclosures, cork, rubber, linoleum and composition floors, ventilating, silencing, air conditioning and cooling equipment, shall be deemed to be included in such fixtures, equipment, improvements and appurtenances, whether or not attached to or built into the Premises. Where not built into the Premises, all removable electric fixtures, carpets, drinking or tap water facilities, furniture, or trade fixtures or business equipment or Tenant's inventory or stock in trade shall not be deemed to be included in such fixtures, equipment, improvements and appurtenances and may be, and upon the request of Landlord as set forth above, will be removed by Tenant upon the condition that such removal shall not materially damage the Premises or the Building and that the cost of repairing any damage to the Premises or the Building arising from installation or such removal shall be paid by Tenant. The covenants of this Section shall survive the expiration or earlier termination of the Term.

12. ALTERATIONS AND IMPROVEMENTS BY TENANT

Tenant shall make no alterations, decorations, installations, removals, additions or improvements in or to the Premises without Landlord's prior written consent, which consent shall not be unreasonably withheld or delayed, and unless made by contractors or mechanics approved by Landlord. No installations or work shall be undertaken or begun by Tenant until: (i) Landlord has approved written plans and specifications and a time schedule for such work; (ii) Tenant has made provision for either written waivers of liens from all contractors, laborers and suppliers of materials for such installations or work, the filing of lien bonds on behalf of such contractors, laborers and suppliers, or other appropriate protective measures approved by Landlord; and (iii) Tenant has procured appropriate surety payment and performance bonds. No amendments or additions to such plans and specifications shall be made without the prior written consent of Landlord. Landlord's consent and approval required under this Article 12 shall not be unreasonably withheld. Landlord's approval is solely given for the benefit of Landlord and neither Tenant nor any third party shall have the right to rely upon Landlord's approval of Tenant's plans for any purpose whatsoever. Without limiting the foregoing, Tenant shall be responsible

for all elements of the design of Tenant's plans (including, without limitation, compliance with law, functionality of design, the structural integrity of the design, the configuration of the Premises and the placement of Tenant's furniture, appliances and equipment), and Landlord's approval of Tenant's plans shall in no event relieve Tenant of the responsibility for such design. Landlord shall have no liability or responsibility for any claim, injury or damage alleged to have been caused by the particular materials, whether building standard or non-building standard, appliances or equipment selected by Tenant in connection with any work performed by or on behalf of Tenant in the Premises including, without limitation, furniture, carpeting, copiers, laser printers, computers and refrigerators. Any such work, alterations, decorations, installations, removals, additions and improvements shall be done at Tenant's sole expense and at such times and in such manner as Landlord may from time to time designate. If Tenant shall make any alterations, decorations, installations, removals, additions or improvements ("Tenant Alterations"), then at the time of requesting consent therefore Tenant may make a written request to Landlord that such Tenant Alterations will not have to be removed at the expiration or earlier termination of the Lease. If Tenant makes such request, then unless the Landlord requires at the time it provides Landlord's consent that such Tenant Alterations must be removed at the expiration or sooner termination of the term of this Lease or that Tenant must restore the Premises to substantially the same condition as existed at the Term Commencement Date, then Tenant shall not be required to remove the Tenant Alterations at the

expiration or sooner termination of the term of this Lease. Tenant shall pay, as an additional charge, the entire increase in real estate taxes on the Building which shall, at any time prior to or after the Term Commencement Date, result from or be attributable to any alteration, addition or improvement to the Premises made by or for the account of Tenant. Notwithstanding the foregoing, Landlord's consent shall not be required (but Tenant shall be required to notify Landlord of such prior to commencement of work) for any alteration that satisfies all of the following criteria (each a "Limited Alteration"): (1) is an interior alteration of a non-structural nature to the Premises; (2) is not visible from the exterior of the Premises or Building; (3) will not affect the systems serving any portion of the Building (including, without limitation, any fire, safety, telecommunication, electrical, mechanical, ventilation or plumbing systems of the Building) and will not affect the structure of the Building; (4) does not cause any material penetration in or otherwise affect any walls, floors, roofs or other structural elements of the Building, (5) does not require the issuance of any permits, licenses, approvals or the like, (6) does not require unusual expense to readapt the premises to normal office use at the termination; and (7) does not cost more than $10,000.00 for each such Limited Alteration; provided that all work shall be done by contactors reasonably approved by Landlord and otherwise in accordance with the terms of this Lease.

If, as a result of any alterations, decorations, installations, removals, additions and improvements made by Tenant, Landlord is obligated to comply with the Americans With Disabilities Act or any other federal, state or local laws or regulations and such compliance requires Landlord to make any improvement or alteration to any portion of the Building or the Complex, as a condition to Landlord's consent, Landlord shall have the right to require Tenant to pay to Landlord prior to the construction of any such alteration, decoration, installation, removal, addition or improvement by Tenant, the entire cost of any improvement or alteration Landlord is obligated to complete by such law or regulation; provided, however, that absent such alterations, Landlord shall be responsible, at Landlord's sole cost and expense, for ensuring that the Building's common areas are in compliance with the Americans With Disabilities Act.

Without limiting any of the terms hereof, Landlord will not approve any alteration, decoration, installation, removal, addition or improvement requiring unusual expense to readapt the Premises to normal office use on lease termination or increasing the cost of construction, insurance or Taxes on the Building or of Landlord's services to the Premises, unless Tenant first gives assurances or security acceptable to Landlord that such re-adaptation will be made prior to such termination without expense to Landlord and makes provisions acceptable to Landlord for payment of such increased cost.

13. TENANT'S CONTRACTORS-MECHANICS' AND OTHER LIENS-STANDARD OF TENANT'S PERFORMANCE-COMPLIANCE WITH LAWS

Whenever Tenant shall make any alterations, decorations, installations, removals, additions or improvements in or to the Premises—whether such work be done prior to or after the Term Commencement Date—Tenant will strictly observe the following covenants and agreements:

(a) Tenant agrees that it will not, either directly or indirectly, use any contractors and/or materials if their use will create any difficulty, whether in the nature of a labor dispute or otherwise, with other contractors and/or labor engaged by Tenant or Landlord or others in the construction, maintenance and/or operation of the Building or any part thereof.

(b) In no event shall any material or equipment be incorporated in or added to the Premises, so as to become a fixture or otherwise a part of the Building, in connection with any such alteration, decoration, installation, addition or improvement which is subject to any lien, charge, mortgage or other encumbrance of any kind whatsoever or is subject to any security interest or any form of title retention agreement. No installations or work shall be undertaken or begun by Tenant until (i) Tenant has made provision for written waiver of liens from all contractors, laborers and suppliers of materials for such installations or work, and taken other appropriate protective measures approved by Landlord; and (ii) Tenant has procured appropriate surety payment and performance bonds which shall name Landlord as an additional obligee and has filed lien bond(s) (in jurisdictions where available) on behalf of such contractors, laborers and suppliers. Any mechanic's lien filed against the Premises or the Building for work claimed to have been done for, or materials claimed to have been furnished to, Tenant shall be discharged by Tenant within ten (10) days thereafter, at Tenant's expense by filing the bond required by law or otherwise. If Tenant fails so to discharge any lien, Landlord may do so at Tenant's expense and Tenant shall reimburse Landlord for any expense or cost incurred by Landlord in so doing within fifteen (15) days after rendition of a bill therefor.

(c) All installations or work done by Tenant shall be at its own expense and shall at all times comply with (i) laws, rules, orders and regulations of governmental authorities having jurisdiction thereof; (ii) orders, rules and regulations of any Board of Fire Underwriters, or any other body hereafter constituted exercising similar functions, and governing insurance rating bureaus; (iii) Rules and Regulations of Landlord; and (iv) plans and specifications prepared by and at the expense of Tenant theretofore submitted to and approved by Landlord.

(d) Tenant shall procure and deliver to Landlord copies of all necessary permits before undertaking any work in the Premises; do all of such work in a good and workmanlike manner, employing materials of good quality and complying with all governmental requirements;

and defend, save harmless, exonerate and indemnify Landlord from all injury, loss or damage to any person or property occasioned by or growing out of such work. Tenant shall cause contractors employed by Tenant to carry Worker's Compensation Insurance in accordance with statutory requirements, Automobile Liability Insurance and, naming Landlord as an additional insured, Commercial General Liability Insurance covering such contractors on or about the Premises in the amounts stated in Article 15 hereof or in such other reasonable amounts as Landlord shall require and to submit certificates evidencing such coverage to Landlord prior to the commencement of such work.

14. REPAIRS BY TENANT-FLOOR LOAD

14.1 Repairs by Tenant. Tenant shall keep all and singular the Premises neat and clean (including periodic rug shampoo and waxing of tiled floors and cleaning of blinds and drapes) and in such repair, order and condition as the same are in on the Term Commencement Date or may be put in during the term hereof, reasonable use and wearing thereof and damage by fire or by other casualty excepted. For purposes of this Lease, the terms "reasonable use and wearing" and "ordinary wear and use" (as referred to in Article 22 herein) constitute that normal, gradual deterioration which occurs due to aging and ordinary use of the Premises despite reasonable and timely maintenance and repair, but in no event shall the aforementioned terms excuse Tenant from its duty to keep the Premises in good maintenance and repair or otherwise usable, serviceable and tenantable as required in the Lease. Tenant shall be solely responsible for the proper maintenance of all equipment and appliances operated by Tenant, including, without limitation, copiers, laser printers, computers and refrigerators. Tenant shall make, as and when needed as a result of misuse by, or neglect or improper conduct of, Tenant or Tenant's servants, employees, agents, contractors, invitees, or licensees or otherwise, all repairs in and about the Premises necessary to preserve them in such repair, order and condition, which repairs shall be in quality and class equal to the original work. Landlord may elect, at the expense of Tenant, to make any such repairs or to repair any damage or injury to the Building or the

Premises caused by moving property of Tenant in or out of the Building, or by installation or removal of furniture or other property, or by misuse by, or neglect, or improper conduct of, Tenant or Tenant's servants, employees, agents, contractors, or licensees.

14.2 Floor Load-Heavy Machinery. Tenant shall not place a load upon any floor of the Premises exceeding the floor load per square foot of area which such floor was designed to carry and which is allowed by law. Landlord reserves the right to prescribe the weight and position of all business machines and mechanical equipment, including safes, which shall be placed so as to distribute the weight. Business machines and mechanical equipment shall be placed and maintained by Tenant at Tenant's expense in settings sufficient in Landlord's judgment to absorb and prevent vibration, noise and annoyance. Tenant shall not move any safe, heavy machinery, heavy equipment, freight, bulky matter, or fixtures into or out of the Building without Landlord's prior written consent. If such safe, machinery, equipment, freight, bulky matter or fixtures requires special handling, Tenant agrees to employ only persons holding a Master Rigger's License to do said work, and that all work in connection therewith shall comply with applicable laws and regulations. Any such moving shall be at the sole risk and hazard of Tenant and Tenant will defend, indemnify and save Landlord harmless against and from any liability, loss, injury, claim or suit resulting directly or indirectly from such moving. Proper placement of all such business machines, etc., in the Premises shall be Tenant's responsibility.

15. INSURANCE, INDEMNIFICATION, EXONERATION AND EXCULPATION

15.1 General Liability Insurance. During the term of this Lease, Tenant shall procure, and keep in force and pay for :

(a) Commercial General Liability Insurance insuring Tenant on an occurrence basis against all claims and demands for personal injury liability (including, without limitation, bodily injury, sickness, disease, and death) or damage to property which may be claimed to have occurred from and after the time Tenant and/or its contractors enter the Premises in accordance with Article 4 of this Lease, of not less than Three Million ($3,000,000) Dollars in the event of personal injury to any number of persons or damage to property, arising out of any one occurrence, and contain the "Amendment of the Pollution Exclusion" for damage caused by heat, smoke or fumes from a hostile fire. The policy shall not contain any intra-insured exclusions as between insured persons or organizations, but shall include coverage for liability assumed under this Lease as an "insured contract" for the performance of Tenant's indemnity obligations under this Lease. Landlord may from time to time during the term reasonably increase the coverages required of Tenant hereunder to that customarily carried in the area in which the Premises are located on property similar to the Premises.

(b) Workers' Compensation in amounts required by the State in which the Building is located and Employer's Liability insurance in the amount of $1,000,000.00 per occurrence.

(c) Tenant shall obtain and maintain loss of income and extra expense insurance in amounts as will reimburse Tenant for direct or indirect loss of earnings attributable to all peril commonly insured against by prudent lessees in the business of Tenant or attributable to prevention of access to the Premises as a result of such perils.

(d) So called "Special Form" insurance coverage for all of its contents, furniture, furnishings, equipment, improvements, fixtures and personal property located at the Premises providing protection in an amount equal to one hundred percent (100%) of the replacement cost basis of said items. If this Lease is terminated as the result of a casualty in accordance with Section 18, the proceeds of said insurance attributable to the replacement of all Tenant's Improvements installed at the Premises by Landlord or at Landlord's cost shall be paid to Landlord.

(e) Any other form or forms of insurance as Tenant or Landlord or any mortgagees of Landlord may reasonably require from time to time in form, in amounts and for insurance risks against which a prudent tenant would protect itself.

15.2 Certificates of Insurance. Such insurance shall be effected with insurers approved by Landlord, authorized to do business in the State wherein the Building is situated under valid and enforceable policies wherein Tenant names Landlord, Landlord's managing agent and Landlord's Mortgagees as additional insureds. Such insurance shall provide that it shall not be canceled or modified without at least thirty (30) days' prior written notice to each insured named therein. On or before the time Tenant and/or its contractors enter the Premises in accordance with Articles 4 and 14 of this Lease and thereafter not less than fifteen (15) days prior

to the expiration date of each expiring policy, original copies of the policies provided for in Article 15.1 issued by the respective insurers, or certificates of such policies setting forth in full the provisions thereof and issued by such insurers together with evidence satisfactory to Landlord of the payment of all premiums for such policies, shall be delivered by Tenant to Landlord and certificates as aforesaid of such policies shall upon request of Landlord, be delivered by Tenant to the holder of any mortgage affecting the Premises.

15.3 General. Tenant will save Landlord, its agents and employees, harmless and will exonerate, defend and indemnify Landlord, its agents and employees, from and against any and all claims, liabilities or penalties asserted by or on behalf of any person, firm, corporation or public authority arising from the Tenant's breach of the Lease or:

(a) On account of or based upon any injury to person, or loss of or damage to property, sustained or occurring on the Premises on account of or based upon the act, omission, fault, negligence or misconduct of any person whomsoever (except to the extent the same is caused by the negligence of Landlord, its agents, contractors or employees);

(b) On account of or based upon any injury to person, or loss of or damage to property, sustained or occurring elsewhere (other than on the Premises) in or about the Building (and, in particular, without limiting the generality of the foregoing, on or about the elevators, stairways, public corridors, sidewalks, concourses, arcades, malls, galleries, vehicular tunnels, approaches, areaways, roof, or other appurtenances and facilities used in connection with the Building or Premises) arising out of the use or occupancy of the Building or Premises by the Tenant, or by any person claiming by, through or under Tenant, or on account of or based upon the act, omission, fault, negligence or misconduct of Tenant, its agents, employees or contractors;

(c) On account of or based upon (including monies due on account of) any work or thing whatsoever done (other than by Landlord or its contractors, or agents or employees of either) on the Premises during the term of this Lease and during the period of time, if any, prior to the Term Commencement Date that Tenant may have been given access to the Premises; and

(d) Tenant's obligations under this Article 15.3 shall be insured either under the Commercial General Liability Insurance required under Article 15.1, above, or by a contractual insurance rider or other coverage; and certificates of insurance in respect thereof shall be provided by Tenant to Landlord upon request.

So long as Tenant is not in default under this Lease, Landlord will save Tenant, its agents and employees, harmless and will exonerate, defend and indemnify Tenant, its agents and employees, from and against any and all claims, liabilities or penalties asserted by or on behalf of any person, firm, corporation or public authority on account of or based upon any injury to person, or loss of or damage to property, sustained or occurring in or about the Building or the Complex (other than on the Premises) and caused by the negligence or misconduct of Landlord, its agents, employees or contractors.

15.4 Property of Tenant. In addition to and not in limitation of the foregoing. Tenant covenants and agrees that, to the maximum extent permitted by law, all merchandise, furniture, fixtures and property of every kind, nature and description related or arising out of

Tenant's leasehold estate hereunder, which may be in or upon the Premises or Building, in the public corridors, or on the sidewalks, areaways and approaches adjacent thereto, shall be at the sole risk and hazard of Tenant, and that if the whole or any part thereof shall be damaged, destroyed, stolen or removed from any cause or reason whatsoever, no part of said damage or loss shall be charged to, or borne by, Landlord.

15.5 Bursting of Pipes, etc. Landlord shall not be liable for any injury or damage to persons or property resulting from fire, explosion, falling plaster, steam, gas, air contaminants or emissions, electricity, electrical or electronic emanations or disturbance, water, rain or snow or leaks from any part of the Building or from the pipes, appliances, equipment or plumbing works or from the roof, street or subsurface or from any other place or caused by dampness, vandalism, malicious mischief or by any other cause of whatever nature, unless caused by or due to the negligence of Landlord, its agents, servants or employees, and then only after (i) notice to Landlord of the condition claimed to constitute negligence and (ii) the expiration of a reasonable time after such notice has been received by Landlord without Landlord having taken all reasonable and practicable means to cure or correct such condition; and pending such cure or correction by Landlord, Tenant shall take all reasonably prudent temporary measures and safeguards to prevent any injury, loss or damage to persons or property. In no event shall Landlord be liable for any loss, the risk of which is covered by Tenant's insurance or is required to be so covered by this Lease; nor shall Landlord or its agents be liable for any such damage caused by other tenants or persons in the Building or caused by operations in construction of any private, public, or quasi-public work; nor shall Landlord be liable for any latent defect in the Premises or in the Building.

15.6 Repairs and Alterations-No Diminution of Rental Value. Except as otherwise provided in Article 18, there shall be no allowance to Tenant for diminution of rental value and no liability on the part of Landlord by reason of inconvenience, annoyance or injury to Tenant arising from any repairs, alterations, additions, replacements or improvements made by Landlord, or any related work, Tenant or others in or to any portion of the Building or Premises or any property adjoining the Building, or in or to fixtures, appurtenances, or equipment thereof, or for failure of Landlord or others to make any repairs, alterations, additions or improvements in or to any portion of the Building, or of the Premises, or in or to the fixtures**,** appurtenances or equipment thereof.

16. ASSIGNMENT, MORTGAGING AND SUBLETTING

16.1 Generally. (a) Tenant covenants and agrees that neither this Lease nor the term and estate hereby granted, nor any interest herein or therein, will be assigned, sublet, mortgaged, pledged, encumbered or otherwise transferred, voluntarily, by operation of law or otherwise, and that neither the Premises, nor any part thereof will be encumbered in any manner by reason of any act or omission on the part of Tenant, or used or occupied, or permitted to be used or occupied, or utilized for desk space or for mailing privileges, by anyone other than Tenant, or for any use or purpose other than as stated in Exhibit 1, or be sublet, or offered or advertised for subletting. Notwithstanding the foregoing, Tenant may assign or sublet (which term, without limitation, shall include the granting of any concessions, licenses, occupancy rights, management arrangements and the like) the whole or any part of the Premises with, in each instance, having first received the express, written consent of Landlord, which consent shall not be unreasonably withheld, delayed or conditioned.

(b) Without limitation, it shall not be unreasonable for Landlord to withhold such approval from any assignment or subletting where, in Landlord's reasonable opinion: (i) the proposed assignee or sublessee does not have a financial standing and credit rating reasonably acceptable to Landlord; (ii) the business in which the proposed assignee or sublessee is engaged could detract from the Building, its value or the costs of ownership thereof; (iii) intentionally omitted; (iv) the proposed sublessee or assignee is a current tenant or a prospective tenant (meaning such tenant, within the past six (6) months preceding the request for an assignment or sublease) has been shown or has been presented with or has made an offer to lease space) of the Building; (v) the use of the Premises by any sublessee or assignee (even though a Permitted Use) violates any use restriction granted by Landlord in any other lease or would otherwise cause Landlord to be in violation of its obligations under another lease or agreement to which Landlord is a party; (vi) if such assignment or subleasing is not approved of by the holder of any mortgage on the Building (if such approval is required); (vii) a proposed assignee's or subtenant's business will impose a burden on the Building's parking facilities, elevators, common areas, facilities, or utilities that is greater than the burden imposed by Tenant, in Landlord's reasonable judgment; (viii) any guarantor of this Lease refuses to consent to the proposed transfer or to execute a written agreement reaffirming the guaranty; (ix) Tenant is in default of any of its obligations under the Lease at the time of the request or at the time of the proposed assignment or sublease, each beyond any applicable notice or cure period; (x) if requested by Landlord, the assignee or subtenant refuses to sign a non-disturbance and attornment agreement in favor of Landlord's lender; (xi) Landlord has sued or been sued by the proposed assignee or subtenant or has otherwise been involved in a legal dispute with the proposed assignee or subtenant; (xii) the assignee or subtenant is involved in a business which is not in keeping with the then current standards of the Building; (xiii) the assignment or sublease will result in there being more than one (1) subtenant of the Premises (e.g., the assignee or subtenant intends to use the Premises as an executive suite); or (xiv) the assignee or subtenant is a governmental or quasi-governmental entity or an agency, department or instrumentality of a governmental or quasi-governmental agency. Landlord may condition its consent upon such assignee or sublessee depositing with Landlord such additional security as Landlord may reasonably require to assure the performance and observance of the obligations of such party to Landlord. In no event, however, shall Tenant assign this Lease or sublet the whole or any part of the Premises to a proposed assignee or sublessee which has been judicially declared bankrupt or insolvent according to law, or with respect to which an assignment has been made of property for the benefit of creditors, or with respect to which a receiver, guardian, conservator, trustee in involuntary bankruptcy or similar officer has been appointed to take charge of all or any substantial part of the proposed assignee's or sublessee's property by a court of competent jurisdiction, or with respect to which a petition has been filed for reorganization under any provisions of the Bankruptcy Code now or hereafter enacted, or if a proposed assignee or sublessee has filed a petition for such reorganization, or for arrangements under any provisions of the Bankruptcy Code now or hereafter enacted and providing a plan for a debtor to settle, satisfy or extend the time for the payment of debts.

(c) Any request by Tenant for such consent shall set forth or be accompanied by, in detail reasonably satisfactory to Landlord, the identification of the proposed assignee or sublessee, its financial condition and the terms on which the proposed assignment or subletting is to be made, including,

without limitation, a signed copy of all assignment and sublease documents, and clearly stating the rent or any other consideration to be paid in respect thereto; and such request shall be treated as Tenant's warranty in respect of the information submitted therewith.

Tenant's request shall not be deemed complete or submitted until all of the foregoing information has been received by Landlord. Landlord shall respond to such request for consent within thirty (30) days following Landlord's receipt of all information, documentation and security required by Landlord with respect to such proposed sublease or assignment. In the event Landlord fails to respond in such thirty (30) business day period, Landlord shall be deemed to have approached such request for consent; provided that there appears in bold type on the exterior of the envelope containing Tenant's request, as well as on the top of the written request itself, the statement (in a reasonably large size font and in bold) that Landlord's failure to respond to the written request within thirty (30) business days after receipt thereof shall be deemed approval of the within request.

(d) The foregoing restrictions shall be binding on any assignee or sublessee to which Landlord has consented, provided, notwithstanding anything else contained in this Lease, Landlord's consent to any further assignment, subleasing or any sub-subleasing by any approved assignee or sublessee may be withheld by Landlord at Landlord's sole and absolute discretion.

(e) Consent by Landlord to any assignment or subleasing shall not include consent to the assignment or transferring of any lease renewal, extension or other option, first offer, first refusal or other rights granted hereunder, or any special privileges or extra services granted to tenant by separate agreement (written or oral), or by addendum or amendment of the Lease.

(f) In the case of any assignment of this Lease or subletting of the Premises, the Tenant named herein shall be and remain fully and primarily liable for the obligations of Tenant hereunder, notwithstanding such assignment or subletting, including, without limitation, the obligation to pay the Yearly Rent and other amounts provided under this Lease, and the Tenant shall be deemed to have waived all suretyship defenses.

(g) In addition to the foregoing, it shall be a condition of the validity of any such assignment or subletting that the assignee or sublessee agrees directly with Landlord, in form satisfactory to Landlord, to be bound by all the obligations of Tenant hereunder, including, without limitation, the obligation to pay Yearly Rent and other amounts provided for under this Lease, the covenant regarding use and the covenant against further assignment and subletting.

16.2 Reimbursement, Recapture and Excess Rent.

(a) Tenant shall, upon demand, reimburse Landlord for the fees and expenses (including legal and administrative fees and costs) incurred by Landlord in processing any request to assign this Lease or to sublet all or any portion of the Premises, whether or not Landlord agrees thereto, and if Tenant shall fail promptly so to reimburse Landlord, the same shall be a default in Tenant's monetary obligations under this Lease subject to the applicable grace and cure period set forth in Article 21.

(b) If Tenant requests Landlord's consent to assign this Lease or sublet (or otherwise grant occupancy rights in and to) all or a portion of the Premises, Landlord shall have the option, exercisable by written notice to Tenant given within thirty (30) days after Landlord's receipt of Tenant's completed request, to terminate this Lease as of the date specified in such

notice, which shall not be less than thirty (30) nor more than one hundred twenty (120) days after the date of such notice, as to the entire Premises in the case of a proposed assignment or subletting of the whole Premises, and as to the portion of the Premises to be sublet in the case of a subletting of a portion. In the event of termination in respect of a portion of the Premises, the portion so eliminated shall be delivered to Landlord on the date specified in good order and condition in the manner provided in this Lease at the end of the Term and thereafter, to the extent necessary in Landlord's judgment, Landlord, at its own cost and expense, may have access to and may make modification to the Premises (or portion thereof) so as to make such portion a self-contained rental unit with access to common areas, elevators and the like. Yearly Rent and the Total Rentable Area of the Premises shall be adjusted according to the extent of the Premises for which the Lease is terminated.

(c) Without limitation of the rights of Landlord hereunder in respect thereto, if there is any assignment of this Lease by Tenant for consideration or a subletting of the whole of the Premises by Tenant at a rent which exceeds the rent payable hereunder by Tenant, or if there is a subletting of a portion of the Premises by Tenant at a rent in excess of the subleased portion's pro rata share of the rent payable hereunder by Tenant, then Tenant shall pay to Landlord, as additional rent, forthwith upon Tenant's receipt of in the case of an assignment, one-half (1/2) of all of the consideration (or the cash equivalent thereof) therefor which exceeds the rent payable hereunder by Tenant and in the case of a subletting, one-half (1/2) of all of any such excess rent. For the purposes of this subsection, the term "rent" shall mean all Yearly Rent, additional rent or other payments and/or consideration payable by one party to another for the use and occupancy of all or a portion of the Premises including, without limitation, key money, or bonus money paid by the assignee or subtenant to Tenant in connection with such transaction and any payment in excess of fair market value for services rendered by Tenant to the assignee or subtenant or for assets, fixtures, inventory, equipment or furniture transferred by Tenant to the assignee or subtenant in connection with any such transaction, but shall exclude any separate payments by Tenant for reasonable attorney's fees and broker's commissions in connection with such assignment or subletting and leasehold improvements paid for by Tenant in connection with such assignment or subletting.

(d) If the Premises or any part thereof are sublet by Tenant, following the occurrence of a default which has continued beyond the applicable cure period, Landlord, in addition to any other remedies provided hereunder or at law, may at its option collect directly from such sublessee(s) all rents becoming due to the Tenant under such sublease(s) and apply such rent against any amounts due Landlord by Tenant under this Lease, and Tenant hereby irrevocably authorizes and directs such sublessee(s) to so make all such rent payments, if so directed by Landlord; and it is understood that no such election or collection or payment shall be construed to constitute a novation of this Lease or a release of Tenant hereunder, or to create any lease or occupancy agreement between the Landlord and such subtenant or impose any obligations on Landlord, or otherwise constitute the recognition of such sublease by Landlord for any purpose whatsoever.

(e) The following terms and conditions shall apply to any subletting by Tenant of all or any part of the Premises and shall be deemed included in all subleases under this Lease whether or not expressly incorporated therein:

Tenant hereby absolutely and unconditionally assigns and transfers to Landlord all of Tenant's interest in all rentals and income arising from any sublease entered into by Tenant, and Landlord may collect such rent and income and apply same toward Tenant's obligations under this Lease; provided, however, that until a default occurs in the performance of Tenant's obligations under this Lease, Tenant may receive, collect and enjoy the rents accruing under such sublease. Landlord shall not, by reason of this or any other assignment of such rents to Landlord nor by reason of the collection of the rents from a subtenant, be deemed to have assumed or recognized any sublease or to be liable to the subtenant for any failure of Tenant to perform and comply with any of Tenant's obligations to such subtenant under such sublease, including, but not limited to, Tenant's obligation to return any security deposit. Tenant hereby irrevocably authorizes and directs any such subtenant, upon receipt of a written notice from Landlord stating that a default exists in the performance of Tenant's obligations under this Lease, to pay to Landlord the rents due as they become due under the sublease. Tenant agrees that such subtenant shall have the right to rely upon any such statement and request from Landlord, and that such subtenant shall pay such rents to Landlord without any obligation or right to inquire as to whether such default exists and notwithstanding any notice from or claim from Tenant to the contrary. In the event Tenant shall default in the performance of its obligations under this Lease or Landlord terminates this Lease by reason of a default of Tenant, Landlord at its option and without any obligation to do so, may require any subtenant to attorn to Landlord, in which event Landlord shall undertake the obligations of Tenant under such sublease from the time of the exercise of said option to the termination of such sublease; provided, however, Landlord shall not be liable for any prepaid rents or security deposit paid by such subtenant to Tenant or for any other prior defaults of Tenant under such sublease.

16.3 Certain Transfers/Miscellaneous.

Notwithstanding any other provision of this Article 16, transactions with an entity (each an "Assignee") (i) into or with which Tenant is merged or consolidated, (ii) to which substantially all of Tenant's assets are transferred as a going concern, or (iii) which controls or is controlled by Tenant or is under common control with Tenant, shall not be deemed to be an assignment or subletting within the meaning of this Article, provided that in any of such events (1) Landlord receives prior written notice of any such transactions, (2) the assignee or subtenant agrees directly with Landlord, by written instrument in form satisfactory to Landlord, to be bound by all the obligations of Tenant hereunder including, without limitation, the covenant against further assignment and subletting, (3) in no event shall Tenant be released from its obligations under this Lease, (4) any such transfer or transaction is for a legitimate, regular business purpose of Tenant other than a transfer of Tenant's interest in this Lease, and (5) the involvement by Tenant or its assets in any transaction, or series of transactions (by way of merger, sale, acquisition, financing, refinancing, transfer, leveraged buy-out or otherwise) whether or not a formal assignment or hypothecation of this Lease or Tenant's assets occurs, will not result in a reduction of the "Net Worth" of Tenant as hereinafter defined, by an amount equal to such Net Worth of Tenant as it is represented to Landlord at the time of the execution by Landlord of this Lease, or as it exists immediately prior to said transaction or transactions constituting such reduction, at whichever time said Net Worth of Tenant was or is greater. "Net Worth" of Tenant for purposes of this section shall be the net worth and liquidity of Tenant (excluding any guarantors) established under generally accepted accounting principles consistently applied. In addition, the public offering of shares or other ownership interest in Tenant or any private equity financing of Tenant shall not be

deemed an assignment within the meaning of this Article requiring prior consent of Landlord provided Tenant complies with the provisions of subparagraphs (1), (3), (4) and (5) above.

If Tenant is an individual who uses and/or occupies the Premises with partners, or if Tenant is a partnership, then:

(i) Each present and future partner shall be personally bound by and upon all of the covenants, agreements, terms, provisions and conditions set forth in this Lease on the part of Tenant to be performed; and

(ii) In confirmation of the foregoing, Landlord may (but without being required to do so) request (and Tenant shall duly comply) that Tenant, at the time that Tenant admits any new partner to its partnership, shall require each such new partner to execute an agreement in form and substance satisfactory to Landlord whereby such new partner shall agree to be personally bound by and upon all of the covenants, agreements, terms, provisions and conditions of this Lease on the part of Tenant to be performed, without regard to the time when such new partner is admitted to partnership or when any obligations under any such covenants, etc., accrue.

The listing of any name other than that of Tenant, whether on the doors of the Premises or on the Building directory, or otherwise, shall not operate to vest in any such other person, firm or corporation any right or interest in this Lease or in the Premises or be deemed to effect or evidence any consent of Landlord, it being expressly understood that any such listing is a privilege extended by Landlord revocable at will by written notice to Tenant.

If this Lease be assigned, or if the Premises or any part thereof be sublet or occupied by anybody other than Tenant, Landlord may, at any time and from time to time, collect rent and other charges from the assignee, subtenant or occupant, and apply the net amount collected to the rent and other charges herein reserved then due and thereafter becoming due, but no such assignment, subletting, occupancy or collection shall be deemed a waiver of this covenant, or the acceptance of the assignee, subtenant or occupant as a tenant, or a release of Tenant from the further performance by Tenant of covenants on the part of Tenant herein contained. Any consent by Landlord to a particular assignment or subletting shall not in any way diminish the prohibition stated in the first sentence of this Article 16 or the continuing liability of the Tenant named on Exhibit 1 as the party Tenant under this Lease. No assignment or subletting shall affect the purpose for which the Premises may be used as stated in Exhibit 1.

17. MISCELLANEOUS COVENANTS

Tenant covenants and agrees as follows:

17.1 Rules and Regulations. Tenant will faithfully observe and comply with the Rules and Regulations, if any, annexed hereto and such other and further reasonable Rules and Regulations as Landlord hereafter at any time or from time to time may make and may communicate in writing to Tenant, which in the reasonable judgment of Landlord shall be necessary for the reputation, safety, care or appearance of the Building, or the preservation of good order therein, or the operation or maintenance of the Building, or the equipment thereof, or the

comfort of tenants or others in the Building, provided, however, that in the case of any conflict between the provisions of this Lease and any such regulations, the provisions of this Lease shall control, and provided further that nothing contained in this Lease shall be construed to impose upon Landlord any duty or obligation

to enforce the Rules and Regulations or the terms, covenants or conditions in any other lease as against any other tenant and Landlord shall not be liable to Tenant for violation of the same by any other tenant or such other tenant's servants, employees, agents, contractors, visitors, invitees or licensees.

17.2 Access to Premises-Shoring. Tenant shall: (i) permit Landlord to erect, use and maintain pipes, ducts and conduits in and through the Premises, provided the same do not materially reduce the floor area or materially adversely affect the appearance thereof; (ii) upon prior oral notice (except that no notice shall be required in emergency situations), permit Landlord and any mortgagee of the Building or the Building and land or of the interest of Landlord therein, and any lessor under any ground or underlying lease, and their representatives, to have free and unrestricted access to and to enter upon the Premises at all reasonable hours for the purposes of inspection or of making repairs, replacements or improvements in or to the Premises or the Building or equipment (including, without limitation, sanitary, electrical, heating, air conditioning or other systems) or of complying with all laws, orders and requirements of governmental or other authority or of exercising any right reserved to Landlord by this Lease (including the right during the progress of any such repairs, replacements or improvements or while performing work and furnishing materials in connection with compliance with any such laws, orders or requirements to take upon or through, or to keep and store within, the Premises all necessary materials, tools and equipment); and (iii) permit Landlord, at reasonable times, to show the Premises during ordinary business hours to any existing or prospective mortgagee, ground lessor, space lessee, purchaser, or assignee of any mortgage, of the Building or of the Building and the land or of the interest of Landlord therein, and during the period of twelve (12) months next preceding the Termination Date to any person contemplating the leasing of the Premises or any part thereof. If, during the last month of the term, Tenant shall have removed all or substantially all of Tenant's property therefrom, Landlord may immediately enter and alter, renovate and redecorate the Premises, without elimination or abatement of rent, or incurring liability to Tenant for any compensation, and such acts shall have no effect upon this Lease. If Tenant shall not be personally present to open and permit an entry into the Premises at any time when for any reason an entry therein shall be necessary or permissible, Landlord or Landlord's agents may enter the same by a master key, or may forcibly enter the same, without rendering Landlord or such agents liable therefor (if during such entry Landlord or Landlord's agents shall accord reasonable care to Tenant's property), and without in any manner affecting the obligations and covenants of this Lease. Provided that Landlord shall incur no additional expense thereby, Landlord shall exercise its rights of access to the Premises permitted under any of the terms and provisions of this Lease in such manner as to minimize to the extent practicable interference with Tenant's use and occupation of the Premises. If an excavation shall be made upon land adjacent to the Premises or shall be authorized to be made, Tenant shall afford to the person causing or authorized to cause such excavation, license to enter upon the Premises for the purpose of doing such work as said person shall deem necessary to preserve the Building from injury or damage and to support the same by proper foundations without any claims for damages or indemnity against Landlord, or diminution or abatement of rent.

17.3 Accidents to Sanitary and Other Systems. Tenant shall give to Landlord prompt notice of any fire or accident in the Premises or in the Building and of any damage to, or defective condition in, any part or appurtenance of the Building including, without limitation, sanitary, electrical, ventilation, heating and air conditioning or other systems located in, or passing through, the Premises. Except as otherwise provided in Articles 18 and 20, and subject to Tenant's obligations in Article 14, such damage or defective condition shall be remedied by Landlord with reasonable diligence, but if such damage or defective condition was caused by Tenant or by the employees, licensees, contractors or invitees of Tenant, the cost to remedy the same shall be paid by Tenant. In addition, all reasonable costs incurred by Landlord in connection with the investigation of any notice given by Tenant shall be paid by Tenant if the reported damage or defective condition was caused by Tenant or by the employees, licensees, contractors, or invitees of Tenant. Tenant shall not be entitled to claim any eviction from the Premises or any damages arising from any such damage or defect unless the same (i) shall have been occasioned by the negligence of the Landlord, its agents, servants or employees and (ii) shall not, after notice to Landlord of the condition claimed to constitute negligence, have been cured or corrected within a reasonable time after such notice has been received by Landlord; and in case of a claim of eviction unless such damage or defective condition shall have rendered the Premises untenantable and they shall not have been made tenantable by Landlord within a reasonable time.

17.4 Signs, Blinds and Drapes. Tenant shall put no signs in any part of the Building except, at Tenant's sole cost and subject to Landlord's prior reasonable approval, on the entrance to the Premises. No signs or blinds may be put on or in any window or elsewhere if visible from the exterior of the Building, nor may the building standard drapes or blinds be removed by Tenant. Landlord shall provide, at its cost, Building standard signage on all tenant directories within the Complex including the three (3) exterior kiosks located at the pedestrian level entries to the Complex and the Garage and elevator lobby directories for the Building. Tenant may hang its own drapes, provided that they shall not in any way interfere with the building standard drapery or blinds or be visible from the exterior of the Building and that such drapes are so hung and installed that when drawn, the building standard drapery or blinds are automatically also drawn. Any signs or lettering in the public corridors or on the doors shall conform to Landlord's building standard design. Neither Landlord's name, nor the name of the Building or Complex of which the Building is a part, or the name of any other structure erected therein shall be used without Landlord's consent in any advertising material (except on business stationery or as an address in advertising matter), nor shall any such name, as aforesaid, be used in any undignified, confusing, detrimental or misleading manner.

17.5 Estoppel Certificate and Financial Statements. Tenant shall at any time and from time to time upon not less than ten (10) days' prior notice by Landlord to Tenant, execute, acknowledge and deliver to Landlord a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as modified and stating the modifications), and the dates to which the Yearly Rent and other charges have been paid in advance, if any, stating whether or not Landlord is in default in performance of any covenant, agreement, term, provision or condition contained in this Lease and, if so, specifying each such default and such other facts as Landlord may reasonably request, it being intended that any such statement delivered pursuant hereto may be relied upon by any prospective purchaser of the Building or of the Building and the land or of any interest of Landlord therein, any mortgagee or prospective mortgagee thereof, any lessor or prospective lessor thereof,

any lessee or prospective lessee thereof, or any prospective assignee of any mortgage thereof. Time is of the essence in respect of any such requested certificate, Tenant hereby acknowledging the importance of such certificates in mortgage financing arrangements, prospective sale and the like. Tenant hereby appoints Landlord Tenant's attorney-in-fact in its name and behalf to execute such statement if Tenant shall fail to execute such statement within such ten (10) day period. Within 120 days after the end of Tenant's fiscal years during the term of this Lease, Tenant agrees to furnish to Landlord copies of Tenant's most recent annual, quarterly and monthly financial statements, audited if available (if such audited financial statement is not available, such financial statement may be certified by an officer (vice president or higher) of Tenant). The financial statements shall be prepared in accordance with generally accepted accounting principles, consistently applied. The financial statements shall include a balance sheet and a statement of profit and loss, and the annual financial statement shall also include a statement of changes in financial position and appropriate explanatory notes. Landlord may deliver the financial statements to any prospective or existing mortgagee or purchaser of the Building and/or Complex provided that such entities are advised to maintain the confidential nature of such financial statements.

17.6 Prohibited Materials and Property. Except as provided in Section 29.11 of this Lease, Tenant shall not bring or permit to be brought or kept in or on the Premises or elsewhere in the Building (i) any inflammable, combustible or explosive fluid, material, chemical or substance including, without limitation, any hazardous substances as defined under Massachusetts General Laws chapter 21E, the Federal Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 USC ·9601 et seq., as amended, under Section 3001 of the Federal Resource Conservation and Recovery Act of

1976, as amended, or under any regulation of any governmental authority regulating environmental or health matters (except for standard office supplies stored in proper containers), (ii) any materials, appliances or equipment (including, without limitation, materials, appliances and equipment selected by Tenant for the construction or other preparation of the Premises and furniture and carpeting) which pose any danger to life, safety or health or may cause damage, injury or death; (iii) any unique, unusually valuable, rare or exotic property, work of art or the like unless the same is fully insured under all-risk coverage, or (iv) any data processing, electronic, optical or other equipment or property of a delicate, fragile or vulnerable nature unless the same are housed, shielded and protected against harm and damage, whether by cleaning or maintenance personnel, radiations or emanations from other equipment now or hereafter installed in the Building, or otherwise. Nor shall Tenant cause or permit any potentially harmful air emissions, odors of cooking or other processes, or any unusual or other objectionable odors or emissions to emanate from or permeate the Premises.

17.7 Requirements of Law-Fines and Penalties. Tenant at its sole expense shall comply with all laws, rules, orders and regulations, including, without limitation, all energy-related requirements, of Federal, State, County and Municipal Authorities and with any direction of any public officer or officers, pursuant to law, which shall impose any duty upon Landlord or Tenant with respect to or arising out of Tenant's use or occupancy of the Premises. Tenant shall reimburse and compensate Landlord for all expenditures made by, or damages or fines sustained or incurred by, Landlord due to nonperformance or noncompliance with or breach or failure to observe any item, covenant, or condition of this Lease upon Tenant's part to be kept, observed, performed or complied with. If Tenant receives notice of any violation of law,

ordinance, order or regulation applicable to the Premises, it shall give prompt notice thereof to Landlord.

17.8 Tenant's Acts—Effect on Insurance. Tenant shall not do or permit to be done any act or thing upon the Premises or elsewhere in the Building which will invalidate or be in conflict with any insurance policies covering the Building and the fixtures and property therein; and shall not do, or permit to be done, any act or thing upon the Premises which shall subject Landlord to any liability or responsibility for injury to any person or persons or to property by reason of any business or operation being carried on upon said Premises or for any other reason. Landlord hereby acknowledges that, to the best of its knowledge and based upon the list of Hazardous Materials provided by Tenant prior to execution of this Lease, Tenant's use of the Premises for laboratory and office use in compliance with its obligations under this Lease and in compliance with all applicable laws and regulations shall not invalidate or be in conflict with any insurance policies covering the Building and the fixtures and property therein. Tenant at its own expense shall comply with all rules, orders, regulations and requirements of the Board of Fire Underwriters, or any other similar body having jurisdiction, and shall not (i) do, or permit anything to be done, in or upon the Premises, or bring or keep anything therein, except as now or hereafter permitted by the Fire Department, Board of Underwriters, Fire Insurance Rating Organization, or other authority having jurisdiction, and then only in such quantity and manner of storage as will not increase the rate for any insurance applicable to the Building, or (ii) use the Premises in a manner which shall increase such insurance rates on the Building, or on property located therein, over that applicable when Tenant first took occupancy of the Premises hereunder. If by reason of the failure of Tenant to comply with the provisions hereof the insurance rate applicable to any policy of insurance shall at any time thereafter be higher than it otherwise would be, the Tenant shall reimburse Landlord for that part of any insurance premiums thereafter paid by Landlord, which shall have been charged because of such failure by Tenant.

17.9 Miscellaneous. Tenant shall not suffer or permit the Premises or any fixtures, equipment or utilities therein or serving the same, to be overloaded, damaged or defaced, nor permit any hole to be drilled or made in any part thereof. Tenant shall not suffer or permit any employee, contractor, business invitee or visitor to violate any covenant, agreement or obligations of the Tenant under this Lease.

18. DAMAGE BY FIRE, ETC.

(a) If the Premises or the Building are damaged in whole or in part by any fire or other casualty (a "casualty"), the Tenant shall immediately give notice thereof to the Landlord. Unless this Lease is terminated as provided herein, the Landlord, at its own expense (except for any insurance deductibles, which shall be deemed Operating Costs), and proceeding with due diligence and all reasonable dispatch, but subject to delays beyond the reasonable control of Landlord, shall repair and reconstruct the same so as to restore the Premises (but not any alterations or additions made by or for Tenant or any trade fixtures, equipment or personal property of Tenant except for Tenant's Improvements) to substantially the same condition they were in prior to the casualty, subject to zoning, building and other laws then in effect. Notwithstanding the foregoing, in no event shall Landlord be obligated either to repair or rebuild if the damage or destruction results from an uninsured casualty or if the costs of such repairing or rebuilding exceeds the amount of the insurance proceeds (net of all costs and expenses incurred in

obtaining same) received by Landlord on account thereof. Landlord shall not be liable for any inconvenience or annoyance to Tenant or injury to the business of Tenant resulting from delays in repairing such damage.

(b) Landlord shall, within forty-five (45) days after the occurrence of a casualty, provide Tenant with a good faith estimate of the time required to repair the damage to the Premises or the Building, as provided herein; if such estimate is for a period of more than two hundred seventy (270) days from the occurrence of the casualty (or during the last eighteen (18) months of the term, for a period of more than ninety (90) days), the Premises shall be deemed "substantially damaged". If the Premises or the Building are substantially damaged, Landlord may elect to terminate this Lease by giving Tenant written notice of such termination within sixty (60) days of the date of such casualty; and if the Premises or the Building are substantially damaged, and if as a result the Premises are rendered completely untenantable or inaccessible for the uses permitted under this Lease, then Tenant may terminate this Lease by giving Landlord written notice of such termination within sixty (60) days of the date of such casualty. Landlord shall not have the right to terminate this Lease as provided in this subsection (b) unless all similarly affected tenants are also terminated by Landlord.

(c) For so long as such damage results in material interference with the operation of Tenant's use of the Premises which material interference causes Tenant to be unable to use the Premises, the Yearly Rent payable by Tenant shall abate or be reduced proportionately for the period, commencing on the day following such material interference and continuing until the Premises has been substantially restored. Notwithstanding the foregoing, if such casualty was due to the fault or neglect of Tenant or Tenant's employees, contractors, invitees or agents, such abatement or reduction shall be made only if and to the extent of any proceeds of rental interruption insurance actually received by Landlord and allocated to the Premises.

(d) If the Premises are damaged by a casualty, and the Lease is not terminated as provided herein, the Tenant, at its own expense, and proceeding with all reasonable dispatch, shall repair and reconstruct all of the improvements, alterations and additions made to the Premises by or for Tenant, including and any trade fixtures, equipment or personal property of Tenant which shall have been damaged or destroyed (other than Tenant's Improvements).

Any dispute between the parties relating to the provisions or obligations in this Article 18 shall be submitted to arbitration pursuant to Article 29.5 hereof.

19. WAIVER OF SUBROGATION

In any case in which Tenant shall be obligated to pay to Landlord any loss, cost, damage, liability, or expense suffered or incurred by Landlord, Landlord shall allow to Tenant as an offset against the amount thereof (i) the net proceeds of any insurance collected by Landlord for or on account of such loss, cost, damage, liability or expense, provided that the allowance of such offset does not invalidate or prejudice the policy or policies under which such proceeds were payable, and (ii) if such loss, cost, damage, liability or expense shall have been caused by a peril against which Landlord has agreed to procure insurance coverage under the terms of this Lease, the amount of such insurance coverage, whether or not actually procured by Landlord.

In any case in which Landlord or Landlord's managing agent shall be obligated to pay to Tenant any loss, cost, damage, liability or expense suffered or incurred by Tenant, Tenant shall allow to Landlord or Landlord's managing agent, as the case may be, as an offset against the amount thereof (i) the net proceeds of any insurance collected by Tenant for or on account of such loss, cost, damage, liability, or expense, provided that the allowance of such offset does not invalidate the policy or policies under which such proceeds were payable and (ii) the amount of any loss, cost, damage, liability or expense caused by a peril covered by fire insurance with the broadest form of property insurance generally available on property in buildings of the type of the Building, whether or not actually procured by Tenant.

The parties hereto shall each procure an appropriate clause in, or endorsement on, any property insurance policy covering the Premises and the Building and personal property, fixtures and equipment located thereon and therein, pursuant to which the insurance companies waive subrogation or consent to a waiver of right of recovery in favor of either party, its respective agents or employees. Having obtained such clauses and/or endorsements, each party hereby agrees that it will not make any claim against or seek to recover from the other or its agents or employees for any loss or damage to its property or the property of others resulting from fire or other perils covered by such property insurance.

20. CONDEMNATION-EMINENT DOMAIN

(a) In the event of any condemnation or taking in any manner for public or quasi-public use, which shall be deemed to include a voluntary conveyance in lieu of a taking (a "taking") of the whole of the Building, this Lease shall forthwith terminate as of the date when Tenant is required to vacate the Premises.

(b) Unless this Lease is terminated as provided herein, the Landlord, at its own expense, and proceeding with due diligence and all reasonable dispatch, but subject to delays beyond the reasonable control of Landlord, shall restore the remaining portion of the Premises (but not any alterations or improvements made by or for Tenant, but including Tenant's Improvements, or any trade fixtures, equipment or personal property of Tenant) and the necessary portions of the Building as nearly as practicable to the same condition as it was prior to such taking, subject to zoning and building laws then in effect. Notwithstanding the foregoing, Landlord's obligation to restore the remaining portion of the Premises shall be limited to the extent of the condemnation proceeds (net of all costs and expenses incurred in connection with same) received by Landlord on account thereof. Landlord shall not be liable for any inconvenience or annoyance to Tenant or injury to the business of Tenant resulting from delays in restoring the Premises.

(c) In the event that only a part of the Premises or the Building shall be taken, then, if such taking is a substantial taking (as hereinafter defined), either Landlord or Tenant may by delivery of notice in writing to the other within sixty (60) days following the date on which Landlord's title has been divested by such authority, terminate this Lease, effective as of the date when Tenant is required to vacate any portion of the Premises or appurtenant rights. A "substantial taking" shall mean a taking which: requires restoration and repair of the remaining portion of the Building that cannot in the ordinary course be reasonably expected to be repaired within one hundred eighty (180) days; results in the loss of reasonable access to the Premises or

results in the loss of more than twenty-five percent (25%) of the rentable floor area of the Premises.

(d) If this Lease is not terminated as aforesaid, then this Lease shall continue in full force and effect, provided if as a result of which there is material interference with the operation of Tenant's use of the Premises, then the Yearly Rent and additional rent payable by Tenant shall be justly and equitably abated and reduced according to the nature and extent of the loss of use thereof suffered by Tenant.

(e) Landlord shall have and hereby reserves and excepts, and Tenant hereby grants and assigns to Landlord, all rights to recover for damages to the Building, the Complex, and the leasehold interest hereby created (including any award made for the value of the estate vested by this Lease in Tenant), and to compensation accrued or hereafter to accrue by reason of such taking, and by way of confirming the foregoing, Tenant hereby grants and assigns, and covenants with Landlord to grant and assign, to Landlord all rights to such damages of compensation. Nothing contained herein shall be construed to prevent Tenant from prosecuting in any condemnation proceedings a separate claim for the value of any of Tenant's personal property and for relocation expenses and business losses, provided that such action shall not affect the amount of compensation otherwise recoverable by Landlord from the taking authority.

Any dispute between the parties relating to the provisions or obligations in this Article 20 shall be submitted to arbitration pursuant to Article 29.5 hereof.

21. DEFAULT

21.1 Conditions of Limitation-Re-Entry-Termination. This Lease and the herein term and estate are, upon the condition that if (a) subject to Article 21.7, Tenant shall neglect or fail to perform or observe any of the Tenant's covenants or agreements herein, including (without limitation) the covenants or agreements with regard to the payment when due of rent, additional charges, reimbursement for increase in Landlord's costs, or any other charge payable by Tenant to Landlord (all of which shall be considered as part of Yearly Rent for the purposes of invoking Landlord's statutory or other rights and remedies in respect of payment defaults); or (b) Tenant shall vacate, desert or abandon the Premises or the same shall become, or shall appear to have become, vacant (whether or not the keys shall have been surrendered or the rent shall have been paid); or (c) Tenant shall be involved in financial difficulties as evidenced by an admission in writing by Tenant of Tenant's inability to pay its debts generally as they become due, or by the making or offering to make a composition of its debts with its creditors; or (d) Tenant shall make an assignment or trust mortgage, or other conveyance or transfer of like nature, of all or a substantial part of its property for the benefit of its creditors, or (e) an attachment on mesne process, on execution or otherwise, or other legal process shall issue against Tenant or its property and a sale of any of its assets shall be held thereunder; or (f) any judgment of $50,000 or more, final beyond appeal or any lien, attachment or the like shall be entered,

recorded or filed against Tenant in any court, registry, etc. and Tenant shall fail to pay such judgment within thirty (30) days after the judgment shall have become final beyond appeal or to discharge or secure by surety bond such lien, attachment, etc. within thirty (30) days of such entry, recording or filing, as the case may be; or (g) the leasehold hereby created shall be taken on execution or by other process of law and shall not be revested in Tenant within thirty (30) days thereafter; or (h) a receiver, sequesterer,

trustee or similar officer shall be appointed by a court of competent jurisdiction to take charge of all or any part of Tenant's property and such appointment shall not be vacated within thirty (30) days; or (i) any proceeding shall be instituted by or against Tenant pursuant to any of the provisions of any Act of Congress or State law relating to bankruptcy, reorganizations, arrangements, compositions or other relief from creditors, and, in the case of any proceeding instituted against it, if Tenant shall fail to have such proceedings dismissed within thirty (30) days or if Tenant is adjudged bankrupt or insolvent as a result of any such proceeding, or (j) any event shall occur or any contingency shall arise whereby this Lease, or the term and estate thereby created, would (by operation of law or otherwise) devolve upon or pass to any person, firm or corporation other than Tenant, except as expressly permitted under Article 16 hereof - then, and in any such event Landlord may, by notice to Tenant, elect to terminate this Lease; and thereupon (and without prejudice to any remedies which might otherwise be available for arrears of rent or other charges due hereunder or preceding breach of covenant or agreement and without prejudice to Tenant's liability for damages as hereinafter stated), upon the giving of such notice, this Lease shall terminate as of the date specified therein as though that were the Termination Date as stated in Section 3.2. Without being taken or deemed to be guilty of any manner of trespass or conversion, and without being liable to indictment, prosecution or damages therefor, Landlord may, forcibly if necessary, enter into and upon the Premises (or any part thereof in the name of the whole); repossess the same as of its former estate; and expel Tenant and those claiming under Tenant. Wherever "Tenant" is used in subdivisions (c), (d), (e), (f), (g), (h) and (i) of this Article 21.1, it shall be deemed to include any one of (i) any corporation of which Tenant is a controlled subsidiary and (ii) any guarantor of any of Tenant's obligations under this Lease. The words "re-entry" and "re-enter" as used in this Lease are not restricted to their technical legal meanings.

21.2 Intentionally Omitted.

21.3 Damages-Termination. Upon the termination of this Lease under the provisions of this Article 21, Tenant shall pay to Landlord the rent and other charges payable by Tenant to Landlord up to the time of such termination, shall continue to be liable for any preceding breach of covenant, and in addition, shall pay to Landlord as damages, at the election of Landlord

either:

(x) the amount by which, at the time of the termination of this Lease (or at any time thereafter if Landlord shall have initially elected damages under subparagraph (y), below), (i) the aggregate of the rent and other charges projected over the period commencing with such termination and ending on the Termination Date as stated in Exhibit 1 exceeds (ii) the aggregate projected fair market rental value of the Premises for such period;

or:

(y) amounts equal to the rent and other charges which would have been payable by Tenant had this Lease not been so terminated, payable upon the due dates therefor specified herein following such termination and until the Termination Date as specified in Exhibit 1, provided, however, if Landlord shall re-let the Premises during such period, that Landlord shall credit Tenant with the net rents received by Landlord from such re-letting, such net rents to be determined by first deducting from the gross rents as and when received by Landlord from such

re-letting the expenses incurred or paid by Landlord in terminating this Lease, as well as the expenses of re-letting, including altering and preparing the Premises for new tenants, brokers' commissions, and all other similar and dissimilar expenses properly chargeable against the Premises and the rental therefrom, it being understood that any such re-letting may be for a period equal to or shorter or longer than the remaining term of this Lease; and provided, further, that (i) in no event shall Tenant be entitled to receive any excess of such net rents over the sums payable by Tenant to Landlord hereunder and (ii) in no event shall Tenant be entitled in any suit for the collection of damages pursuant to this Subparagraph (y) to a credit in respect of any net rents from a re-letting except to the extent that such net rents are actually received by Landlord prior to the commencement of such suit. If the Premises or any part thereof should be re-let in combination with other space, then proper apportionment on a square foot area basis shall be made of the rent received from such re-letting and of the expenses of re-letting.

In calculating the rent and other charges under Subparagraph (x), above, there shall be included, in addition to the Yearly Rent, Tax Share and Operating Expense Share and all other considerations agreed to be paid or performed by Tenant, on the assumption that all such amounts and considerations would have remained constant (except as herein otherwise provided) for the balance of the full term hereby granted.

Suit or suits for the recovery of such damages, or any installments thereof, may be brought by Landlord from time to time at its election, and nothing contained herein shall be deemed to require Landlord to postpone suit until the date when the term of this Lease would have expired if it had not been terminated hereunder.

Nothing herein contained shall be construed as limiting or precluding the recovery by Landlord against Tenant of any sums or damages to which, in addition to the damages particularly provided above, Landlord may lawfully be entitled by reason of any default hereunder on the part of Tenant. Notwithstanding anything to the contrary, Landlord shall be entitled to recover, in addition to the rent and other charges under Subparagraph (x) or (y) above, any other amount necessary to compensate Landlord for all detriment proximately caused by Tenant's failure to perform its obligations under the Lease or which in the ordinary course of things would be likely to result therefrom, including, but not limited to, the cost of recovering possession of the Premises, reasonable attorneys' fees, any real estate commissions actually paid by Landlord and the unamortized value of any free rent, reduced rent, tenant improvement allowance or other economic concessions provided by Landlord.

21.4 Fees and Expenses.

(a) If Tenant shall default in the performance of any covenant on Tenant's part to be performed as in this Lease contained, Landlord may immediately, or at any time thereafter, without notice, perform the same for the account of Tenant. If Landlord at any time is compelled to pay or elects to pay any sum of money, or do any act which will require the payment of any sum of money, by reason of the failure of Tenant to comply with any provision hereof, or if Landlord is compelled to or does incur any expense, including reasonable attorneys' fees, in instituting, prosecuting, and/or defending any action or proceeding instituted by reason of any default of Tenant hereunder, Tenant shall on demand pay to Landlord by way of reimbursement the sum or

sums so paid by Landlord with all costs and damages, plus interest computed as provided in Article 6 hereof.

(b) Tenant shall pay Landlord's cost and expense, including reasonable attorneys' fees, incurred (i) in enforcing any obligation of Tenant under this Lease or (ii) as a result of Landlord, without its fault, being made party to any litigation pending by or against Tenant or any persons claiming through or under Tenant.

21.5 Waiver of Redemption. Tenant does hereby waive and surrender all rights and privileges which it might have under or by reason of any present or future law to redeem the Premises or to have a continuance of this Lease for the term hereby demised after being dispossessed or ejected therefrom by process of law or under the terms of this Lease or after the termination of this Lease as herein provided.

21.6 Landlord's Remedies Not Exclusive. The specified remedies to which Landlord may resort hereunder are cumulative and are not intended to be exclusive of any remedies or means of redress to which Landlord may at any time be lawfully entitled, and Landlord may invoke any remedy (including the remedy of specific performance) allowed at law or in equity as if specific remedies were not herein provided for.

21.7 Grace Period. Notwithstanding anything to the contrary in this Article contained, Landlord agrees not to take any action to terminate this Lease (a) for default by Tenant in the payment when due of any sum of money, if Tenant shall cure such default within five (5) days after written notice thereof is given by Landlord to Tenant, provided, however, that no such notice need be given and no such default in the payment of money shall be curable if on two (2) prior occasions within any one (1) year period there had been a default in the payment of money which had been cured after notice thereof had been given by Landlord to Tenant as herein provided or (b) for default by Tenant in the performance of any covenant other than a covenant to pay a sum of money, if Tenant shall cure such default within a period of thirty (30) days after written notice thereof given by Landlord to Tenant (the "Non-Monetary Grace Period") (except where the nature of the default is such that remedial action should appropriately take place sooner, as indicated in such written notice), or within such additional period as may reasonably be required to cure such default if (because of governmental restrictions or any other cause beyond the reasonable control of Tenant) the default is of such a nature that it cannot be cured within such thirty (30) day period, provided, however, (1) that there shall be no extension of time beyond such thirty (30) day period for the curing of any such default unless, not more than ten (10) days after the receipt of the notice of default, Tenant in writing (i) shall specify the cause on account of which the default cannot be cured during such period and shall advise Landlord of its intention duly to institute all steps necessary to cure the default and (ii) shall, as soon as reasonably practicable, duly institute and thereafter diligently prosecute to completion all steps necessary to cure such default and, (2) that no notice of the opportunity to cure a default need be given, and no grace period whatsoever shall be allowed to Tenant, if the default is incurable or if the covenant or condition the breach of which gave rise to default had, by reason of a breach on a prior occasion, been the subject of a notice hereunder to cure such default. Notwithstanding the foregoing, Tenant shall have no right to notice or the Non-Monetary Grace Period relating to its failure to (v) maintain all insurance as required in Article 15 above; (w) deliver to Landlord the Security Deposit as required by Section 29.13 below; (x) provide Landlord with Estoppel Certificates as required pursuant to Section 17.5

above; (y) provide Landlord with subordination agreements as required pursuant to Article 23 below; or (z) provide Landlord with the certificates of insurance required pursuant to Article 15 above.

Notwithstanding anything to the contrary in this Article 21.7 contained, except to the extent prohibited by applicable law, any statutory notice and grace periods provided to Tenant by law are hereby expressly waived by Tenant.

22. END OF TERM-ABANDONED PROPERTY

Upon the expiration or other termination of the term of this Lease, Tenant shall peaceably quit and surrender to Landlord the Premises and all alterations and additions thereto, broom clean, in good order, repair and condition (except as provided herein and in Articles 8.7, 18 and 20) excepting only ordinary wear and use (as defined in Article 14.1 hereof) and damage by fire or other casualty for which, under other provisions of this Lease, Tenant has no responsibility of repair or restoration. Tenant shall remove all of its property, including, without limitation, all telecommunication, computer and other cabling installed by Tenant in the Premises or elsewhere in the Building, and, to the extent specified by Landlord and subject to Section 12 of this Lease, all alterations and additions made by Tenant and all partitions made by Tenant wholly within the Premises, and shall repair any damages to the Premises or the Building caused by their installation or by such removal. Tenant's obligation to observe or perform this covenant shall survive the expiration or other termination of the term of this Lease.

Tenant will remove any personal property from the Building and the Premises upon or prior to the expiration or termination of this Lease and any such property which shall remain in the Building or the Premises thereafter shall be conclusively deemed to have been abandoned, and may either be retained by Landlord as its property or sold or otherwise disposed of in such manner as Landlord may see fit. If any part thereof shall be sold, Landlord may receive and retain the proceeds of such sale and apply the same, at its option, against the expenses of the sale, the cost of moving and storage, any arrears of Yearly Rent, additional or other charges payable hereunder by Tenant to Landlord and any damages to which Landlord may be entitled under Article 21 hereof or pursuant to law.

If Tenant or anyone claiming under Tenant shall remain in possession of the Premises or any part thereof after the expiration or prior termination of the term of this Lease without any agreement in writing between Landlord and Tenant with respect thereto, then, prior to the acceptance of any payments for rent or use and occupancy by Landlord, the person remaining in possession shall be deemed a tenant-at-sufferance. Whereas the parties hereby acknowledge that Landlord may need the Premises after the expiration or prior termination of the term of the Lease for other tenants and that the damages which Landlord may suffer as the result of Tenant's holding-over cannot be determined as of the Execution Date hereof, in the event that Tenant so holds over, Tenant shall pay to Landlord in addition to all rental and other charges due and accrued under the Lease prior to the date of termination, charges (based upon fair market rental value of the Premises) for use and occupation of the Premises thereafter and, in addition to such sums and any and all other rights and remedies which Landlord may have at law or in equity, an additional use and occupancy charge in the amount of fifty percent (50%) of either the Yearly Rent and other charges calculated (on a daily basis) at the highest rate payable under the terms of this Lease, but

measured from the day on which Tenant's hold-over commenced and terminating on the day on which Tenant vacates the Premises or the fair market value of the Premises for such period, whichever is greater. In addition, Tenant shall save Landlord, its agents and employees, harmless and will exonerate, defend and indemnify Landlord, its agents and employees, from and against any and all damages which Landlord may suffer on account of Tenant's hold over in the Premises after the expiration or prior termination of the term of the Lease.

23. SUBORDINATION

(a) Subject to any mortgagee's or ground lessor's election, as hereinafter provided for, this Lease is subject and subordinate in all respects to all matters of record (including, without limitation, deeds and land disposition agreements), ground leases and/or underlying leases, and all mortgages, any of which may now or hereafter be placed on or affect such leases and/or the real property of which the Premises are a part, or any part of such real property, and/or Landlord's interest or estate therein, and to each advance made and/or hereafter to be made under any such mortgages, and to all renewals, modifications, consolidations, replacements and extensions thereof and all substitutions therefor. This Article 23 shall be self-operative and no further instrument or subordination shall be required. In confirmation of such subordination, Tenant shall execute, acknowledge and deliver promptly any certificate or instrument that Landlord and/or any mortgagee and/or lessor under any ground or underlying lease and/or their respective successors in interest may request, subject to Landlord's, mortgagee's and ground lessor's right to do so for, on behalf and in the name of Tenant under certain circumstances, as hereinafter provided. Tenant acknowledges that, where applicable, any consent or approval hereafter given by Landlord may be subject to the further consent or approval of such mortgagee and/or ground lessor; and the failure or refusal of such mortgagee and/or ground lessor to give such consent or approval shall, notwithstanding anything to the contrary in this Lease contained, constitute reasonable justification for Landlord's withholding its consent or approval.

(b) Any such mortgagee or ground lessor may from time to time subordinate or revoke any such subordination of the mortgage or ground lease held by it to this Lease. Such subordination or revocation, as the case may be, shall be effected by written notice to Tenant and by recording an instrument of subordination or of such revocation, as the case may be, with the appropriate registry of deeds or land records and to be effective without any further act or deed on the part of Tenant. In confirmation of such subordination or of such revocation, as the case may be, Tenant shall execute, acknowledge and promptly deliver any certificate or instrument that Landlord, any mortgagee or ground lessor may request, subject to Landlord's, mortgagee's and ground lessor's right to do so for, on behalf and in the name of Tenant under certain circumstances, as hereinafter provided.

(c) Without limitation of any of the provisions of this Lease, if any ground lessor or mortgagee shall succeed to the interest of Landlord by reason of the exercise of its rights under such ground lease or mortgage (or the acceptance of voluntary conveyance in lieu thereof) or any third party (including, without limitation, any foreclosure purchaser or mortgage receiver) shall succeed to such interest by reason of any such exercise or the expiration or sooner termination of such ground lease, however caused, then such successor may, upon notice and request to Tenant (which, in the case of a ground lease, shall be within thirty (30) days after such expiration or sooner termination), succeed to the interest of Landlord under this Lease, provided,

however, that such successor shall not: (i) be liable for any previous act or omission of Landlord under this Lease; (ii) be subject to any offset, defense, or counterclaim which shall theretofore have accrued to Tenant against Landlord; (iii) have any obligation with respect to any security deposit unless it shall have been paid over or physically delivered to such successor; or (iv) be bound by any previous modification of this Lease or by any previous payment of Yearly Rent for a period greater than one (1) month, made without such ground lessor's or mortgagee's consent where such consent is required by applicable ground lease or mortgage documents. In the event of such succession to the interest of the Landlord — and notwithstanding that any such mortgage or ground lease may antedate this Lease — the Tenant shall attorn to such successor and shall ipso facto be and become bound directly to such successor in interest to Landlord to perform and observe all the Tenant's obligations under this Lease without the necessity of the execution of any further instrument. Nevertheless, Tenant agrees at any time and from time to time during the term hereof to execute a suitable instrument in confirmation of Tenant's agreement to attorn, as aforesaid, subject to Landlord's, mortgagee's and ground lessor's right to do so for, on behalf and in the name of Tenant under certain circumstances, as hereinafter provided.

(d) The term "mortgage(s)" as used in this Lease shall include any mortgage or deed of trust. The term "mortgagee(s)" as used in this Lease shall include any mortgagee or any trustee and beneficiary under a deed of trust or receiver appointed under a mortgage or deed of trust. The term "mortgagor(s)" as used in this Lease shall include any mortgagor or any grantor under a deed of trust.

(e) Tenant hereby irrevocably constitutes and appoints Landlord or any such mortgagee or ground lessor, and their respective successors in interest, acting singly, Tenant's attorney-in-fact to execute and deliver any such certificate or instrument for, on behalf and in the name of Tenant, but only if Tenant fails to execute, acknowledge and deliver any such certificate or instrument within ten (10) days after Landlord or such mortgagee or such ground lessor has made written request therefor.

(f) Notwithstanding anything to the contrary contained in this Article 23, if all or part of Landlord's estate and interest in the real property of which the Premises are a part shall be a leasehold estate held under a ground lease, then: (i) the foregoing subordination provisions of this Article 23 shall not apply to any mortgages of the fee interest in said real property to which Landlord's leasehold estate is not otherwise subject and subordinate; and (ii) the provisions of this Article 23 shall in no way waive, abrogate or otherwise affect any agreement by any ground lessor (x) not to terminate this Lease incident to any termination of such ground lease prior to its term expiring or (y) not to name or join Tenant in any action or proceeding by such ground lessor to recover possession of such real property or for any other relief.

(g) In the event of any failure by Landlord to perform, fulfill or observe any agreement by Landlord herein, in no event will the Landlord be deemed to be in default under this Lease permitting Tenant to exercise any or all rights or remedies under this Lease until the Tenant shall have given written notice of such failure to any mortgagee (ground lessor and/or trustee) of which Tenant shall have been advised and until a reasonable period of time shall have elapsed following the giving of such notice, during which such mortgagee (ground lessor and/or trustee) shall have the right, but shall not be obligated, to remedy such failure.

(h) Upon execution and delivery of this Lease, Landlord agrees to use best efforts to obtain a subordination, non-disturbance and attornment agreement ("SNDA") from its present mortgagee and agrees to use commercially reasonable efforts to obtain an SNDA from any of Landlord's future mortgagees in a form reasonably acceptable to Tenant, Landlord and Landlord's mortgagee. Tenant acknowledges that Landlord's inability to obtain such an SNDA, despite having exercised the requisite efforts to obtain, in no way affects Tenant's obligations under this Lease (except as expressly provided otherwise in Section 29.19 and in no way constitutes a default by Landlord under this Lease.

24. QUIET ENJOYMENT

Landlord covenants that if, and so long as, Tenant keeps and performs each and every covenant, agreement, term, provision and condition herein contained on the part and on behalf of Tenant to be kept and performed, Tenant shall quietly enjoy the Premises from and against the claims of all persons claiming by, through or under Landlord subject, nevertheless, to the covenants, agreements, terms, provisions and conditions of this Lease and to the mortgages, ground leases and/or underlying leases to which this Lease is subject and subordinate, as hereinabove set forth.

Without incurring any liability to Tenant, Landlord may permit access to the Premises and open the same, whether or not Tenant shall be present, upon any demand of any receiver, trustee, assignee for the benefit of creditors, sheriff, marshal or court officer entitled to, or reasonably purporting to be entitled to, such access for the purpose of taking possession of, or removing, Tenant's property or for any other lawful purpose (but this provision and any action by Landlord hereunder shall not be deemed a recognition by Landlord that the person or official making such demand has any right or interest in or to this Lease, or in or to the Premises), or upon demand of any representative of the fire, police, building, sanitation or other department of the city, state or federal governments.

25. ENTIRE AGREEMENT-WAIVER-SURRENDER

25.1 Entire Agreement. This Lease and the Exhibits made a part hereof contain the entire and only agreement between the parties and any and all statements and representations, written and oral, including previous correspondence and agreements between the parties hereto, are merged herein. Tenant acknowledges that all representations and statements upon which it relied in executing this Lease are contained herein and that the Tenant in no way relied upon any other statements or representations, written or oral. Any executory agreement hereafter made shall be ineffective to change, modify, discharge or effect an abandonment of this Lease in whole or in part unless such executory agreement is in writing and signed by the party against whom enforcement of the change, modification, discharge or abandonment is sought.

25.2 Waiver by Landlord. The failure of Landlord to seek redress for violation, or to insist upon the strict performance, of any covenant or condition of this Lease, or any of the Rules and Regulations promulgated hereunder, shall not prevent a subsequent act, which would have originally constituted a violation, from having all the force and effect of an original violation. The receipt by Landlord of rent with knowledge of the breach of any covenant of this Lease shall not be deemed a waiver of such breach. The failure of Landlord to enforce any of such Rules and

Regulations against Tenant and/or any other tenant in the Building shall not be deemed a waiver of any such Rules and Regulations. No provisions of this Lease shall be deemed to have been waived by Landlord unless such waiver be in writing signed by Landlord. No payment by Tenant or receipt by Landlord of a lesser amount than the monthly rent herein stipulated shall be deemed to be other than on account of the stipulated rent, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as rent be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such rent or pursue any other remedy in this Lease provided.

25.3 Surrender. No act or thing done by Landlord during the term hereby demised shall be deemed an acceptance of a surrender of the Premises, and no agreement to accept such surrender shall be valid, unless in writing signed by Landlord. No employee of Landlord or of Landlord's agents shall have any power to accept the keys of the Premises prior to the termination of this Lease. The delivery of keys to any employee of Landlord or of Landlord's agents shall not operate as a termination of the Lease or a surrender of the Premises. In the event that Tenant at any time desires to have Landlord underlet the Premises for Tenant's account, Landlord or Landlord's agents are authorized to receive the keys for such purposes without releasing Tenant from any of the obligations under this Lease, and Tenant hereby relieves Landlord of any liability for loss of or damage to any of Tenant's effects in connection with such underletting.

26. INABILITY TO PERFORM-EXCULPATORY CLAUSE

(a) Except as provided in Articles 4.1 and 4.2 hereof, this Lease and the obligations of Tenant to pay rent hereunder and perform all the other covenants, agreements, terms, provisions and conditions hereunder on the part of Tenant to be performed shall in no way be affected, impaired or excused because Landlord is unable to fulfill any of its obligations under this Lease or is unable to supply or is delayed in supplying any service expressly or impliedly to be supplied or is unable to make or is delayed in making any repairs, replacements, additions, alterations, improvements or decorations or is unable to supply or is delayed in supplying any equipment or fixtures if Landlord is prevented or delayed from so doing by reason of strikes or labor troubles or any other similar or dissimilar cause whatsoever beyond Landlord's reasonable control, including but not limited to, governmental preemption in connection with a national emergency or by reason of any rule, order or regulation of any department or subdivision thereof of any governmental agency or by reason of the conditions of supply and demand which have been or are affected by war, hostilities or other similar or dissimilar emergency. In each such instance of inability of Landlord to perform, Landlord shall exercise reasonable diligence to eliminate the cause of such inability to perform.

(b) Tenant shall neither assert nor seek to enforce any claim against Landlord, or Landlord's agents or employees, or the assets of Landlord or of Landlord's agents or employees, for breach of this Lease or otherwise, other than against Landlord's interest in the Building of which the Premises are a part and in the uncollected rents, issues and profits thereof, and Tenant agrees to look solely to such interest for the satisfaction of any liability of Landlord under this Lease, it being specifically agreed that in no event shall Landlord or Landlord's agents or employees (or any of the officers, trustees, directors, partners, beneficiaries, joint venturers, members, stockholders or other principals or representatives, and the like, disclosed or undisclosed, thereof) ever be personally liable for any such liability. This paragraph shall not

limit any right that Tenant might otherwise have to obtain injunctive relief against Landlord or to take any other action which shall not involve the personal liability of Landlord to respond in monetary damages from Landlord's assets other than the Landlord's interest in said real estate, as aforesaid. In no event shall Landlord or Landlord's agents or employees (or any of the officers, trustees, directors, partners, beneficiaries, joint venturers, members, stockholders or other principals or representatives and the like, disclosed or undisclosed, thereof) ever be liable for consequential or incidental damages. Without limiting the foregoing, in no event shall Landlord or Landlord's agents or employees (or any of the officers, trustees, directors, partners, beneficiaries, joint venturers, members, stockholders or other principals or representatives and the like, disclosed or undisclosed, thereof) ever be liable for lost profits of Tenant. If by reason of Landlord's failure to acquire title to the real property of which the Premises are a part or to complete construction of the Building or Premises, Landlord shall be held to be in breach of this Lease, Tenant's sole and exclusive remedy shall be a right to terminate this Lease.

(c) Landlord shall not be deemed to be in default of its obligations under the Lease unless Tenant has given Landlord written notice of such default, and Landlord has failed to cure such default within thirty (30) days after Landlord receives such notice or such longer period of time as Landlord may

reasonably require to cure such default. Except as otherwise expressly provided in this Lease, in no event shall Tenant have the right to terminate the Lease nor shall Tenant's obligation to pay Yearly Rent or other charges under this Lease abate based upon any default by Landlord of its obligations under the Lease.

27. BILLS AND NOTICES

Any notice, consent, request, bill, demand or statement hereunder by either party to the other party shall be in writing and, if received at Landlord's or Tenant's address, shall be deemed to have been duly given when either delivered or served personally or sent via overnight mail (via nationally recognized courier) or mailed by first class mail postage paid certified or registered mail return receipt requested, addressed to Landlord at its address as stated in Exhibit 1 with a copy to Landlord, c/o Beal and Company, Inc., One Kendall Square, Building 400, 2nd Floor, Cambridge, Massachusetts 02139; ATTN: General Manager and a copy to Sherin and Lodgen LLP, 101 Federal Street, Boston, Massachusetts 02110, ATTN: Robert M. Carney, and to Tenant at the Premises (or at Tenant's address as stated in Exhibit 1, if mailed prior to Tenant's occupancy of the Premises), and a copy to Faber Daeufer & Rosenberg PC, 950 Winter Street, Suite 4500, Waltham, MA 02451, ATTN: Joseph L. Faber or if any address for notices shall have been duly changed as hereinafter provided, if mailed as aforesaid to the party at such changed address. Either party may at any time change the address or specify an additional address for such notices, consents, requests, bills, demands or statements by delivering or mailing, as aforesaid, to the other party a notice stating the change and setting forth the changed or additional address, provided such changed or additional address is within the United States.

If Tenant is a partnership, Tenant, for itself, and on behalf of all of its partners, hereby appoints Tenant's Service Partner, as identified on Exhibit 1, to accept service of any notice, consent, request, bill, demand or statement hereunder by Landlord and any service of process in any judicial proceeding with respect to this Lease on behalf of Tenant and as agent and attorney-in-fact for each partner of Tenant.

All bills and statements for reimbursement or other payments or charges due from Tenant to Landlord hereunder shall be due and payable in full ten (10) days, unless herein otherwise provided, after submission thereof by Landlord to Tenant. Tenant's failure to make timely payment of any amounts indicated by such bills and statements, whether for work done by Landlord at Tenant's request, reimbursement provided for by this Lease or for any other sums properly owing by Tenant to Landlord, shall be treated as a default in the payment of rent, in which event Landlord shall have all rights and remedies provided in this Lease for the nonpayment of rent.

28. PARTIES BOUND-SEIZING OF TITLE

The covenants, agreements, terms, provisions and conditions of this Lease shall bind and benefit the successors and assigns of the parties hereto with the same effect as if mentioned in each instance where a party hereto is named or referred to, except that no violation of the provisions of Article 16 hereof shall operate to vest any rights in any successor or assignee of Tenant and that the provisions of this Article 28 shall not be construed as modifying the conditions of limitation contained in Article 21 hereof.

If, in connection with or as a consequence of the sale, transfer or other disposition of the real estate (land and/or Building, either or both, as the case may be) of which the Premises are a part, Landlord ceases to be the owner of the reversionary interest in the Premises, Landlord shall be entirely freed and relieved from the performance and observance thereafter of all covenants and obligations hereunder on the part of Landlord to be performed and observed, it being understood and agreed in such event (and it shall be deemed and construed as a covenant running with the land) that the person succeeding to Landlord's ownership of said reversionary interest shall thereupon and thereafter assume, and perform and observe, any and all of such covenants and obligations of Landlord.

29. MISCELLANEOUS

29.1 Separability. If any provision of this Lease or portion of such provision or the application thereof to any person or circumstance is for any reason held invalid or unenforceable, the remainder of the Lease (or the remainder of such provision) and the application thereof to other persons or circumstances shall not be affected thereby.

29.2 Captions, etc. The captions are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Lease nor the intent of any provisions thereof. References to "State" shall mean, where appropriate, the Commonwealth of Massachusetts.

29.3 Broker. Tenant represents and warrants that it has not directly or indirectly dealt, with respect to the leasing of office space in the Building or the Complex of which it is a part (called "Building, etc." in this Article 29.3) with any broker or had its attention called to the Premises or other space to let in the Building, etc. by anyone other than the broker, person or firm, if any, designated in Exhibit 1. Tenant agrees to defend, exonerate and save harmless and indemnify Landlord and anyone claiming by, through or under Landlord against any claims for a commission arising out of the execution and delivery of this Lease or out of negotiations between

Landlord and Tenant with respect to the leasing of other space in the Building, etc., provided that Landlord shall be solely responsible for the payment of brokerage commissions to the broker, person or firm, if any, designated in Exhibit 1.

29.4 Modifications. If in connection with obtaining financing for the Building, a bank, insurance company, pension trust or other institutional lender shall request reasonable modifications in this Lease as a condition to such financing, Tenant will not withhold, delay or condition its consent thereto, provided that such modifications do not increase the obligations of Tenant hereunder or materially adversely affect the leasehold interest hereby created.

29.5 Arbitration. Any disputes relating to the provisions or obligations contained in Articles 2.1, 18 and 20 of this Lease as to which a specific provision for a reference to arbitration is made herein shall be submitted to arbitration in accordance with the provisions of applicable state law (as identified on Exhibit 1), as from time to time amended. Arbitration proceedings, including the selection of an arbitrator, shall be conducted pursuant to the rules, regulations and procedures from time to time in effect as promulgated by the American Arbitration Association. Prior written notice of application by either party for arbitration shall be given to the other at least ten (10) days before submission of the application to the said Association's office in the City wherein the Building is situated (or the nearest other city having an Association office). The arbitrator shall hear the parties and their evidence. The decision of the arbitrator shall be binding and conclusive, and judgment upon the award or decision of the arbitrator may be entered in the appropriate court of law (as identified on Exhibit 1); and the parties consent to the jurisdiction of such court and further agree that any process or notice of motion or other application to the Court or a Judge thereof may be served outside the State wherein the Building is situated by registered mail or by personal service, provided a reasonable time for appearance is allowed. The

costs and expenses of each arbitration hereunder and their apportionment between the parties shall be determined by the arbitrator in his award or decision. No arbitrable dispute shall be deemed to have arisen under this Lease prior to the expiration of the period of twenty (20) days after the date of the giving of written notice by the party asserting the existence of the dispute together with a description thereof sufficient for an understanding thereof.

29.6 Governing Law. This Lease is made pursuant to, and shall be governed by, and construed in accordance with, the laws of the State wherein the Building is situated and any applicable local municipal rules, regulations, by-laws, ordinances and the like.

29.7 Assignment of Rents. With reference to any assignment by Landlord of its interest in this Lease, or the rents payable hereunder, conditional in nature or otherwise, which assignment is made to or held by a bank, trust company, insurance company or other institutional lender holding a mortgage or ground lease on the Building, Tenant agrees:

(a) that the execution thereof by Landlord and the acceptance thereof by such mortgagee and/or ground lessor shall never be deemed an assumption by such mortgagee and/or ground lessor of any of the obligations of the Landlord hereunder, unless such mortgagee and/or ground lessor shall, by written notice sent to the Tenant, specifically otherwise elect; and

(b) that, except as aforesaid, such mortgagee and/or ground lessor shall be treated as having assumed the Landlord's obligations hereunder only upon foreclosure of such

mortgagee's mortgage or deed of trust or termination of such ground lessor's ground lease and the taking of possession of the demised Premises after having given notice of its exercise of the option stated in Article 23 hereof to succeed to the interest of the Landlord under this Lease.

29.8 Representation of Authority. By his or her execution hereof each of the signatories on behalf of the respective parties hereby warrants and represents to the other that he is duly authorized to execute this Lease on behalf of such party. If Tenant is a corporation, Tenant hereby appoints the signatory whose name appears below on behalf of Tenant as Tenant's attorney-in-fact for the purpose of executing this Lease for and on behalf of Tenant.

29.9 Expenses Incurred by Landlord Upon Tenant Requests. Tenant shall, upon demand, reimburse Landlord for all reasonable expenses, including, without limitation, legal fees, incurred by Landlord in connection with all requests by Tenant for consents, approvals or execution of collateral documentation related to this Lease, including, without limitation, costs incurred by Landlord in the review and approval of Tenant's plans and specifications in connection with proposed alterations to be made by Tenant to the Premises, requests by Tenant to sublet the Premises or assign its interest in the Lease, the execution by Landlord of estoppel certificates requested by Tenant, and requests by Tenant for Landlord to execute waivers of Landlord's interest in Tenant's property in connection with third party financing by Tenant. Such costs shall be deemed to be additional rent under the Lease.

29.10 Survival. Without limiting any other obligation of the Tenant which may survive the expiration or prior termination of the term of the Lease, all obligations on the part of Tenant to indemnify, defend, or hold Landlord harmless, as set forth in this Lease (including, without limitation, Tenant's obligations under Articles 13(d), 15.3, and 29.3) shall survive the expiration or prior termination of the term of the Lease.

29.11 Hazardous Materials. Landlord and Tenant agree as follows with respect to the existence or use of "Hazardous Material" in or on the Premises, the Building or the Complex.

(a) Tenant, at its sole cost and expense, shall comply with the Emergency Planning and Community Right to Know Act (EPCRTKA) 42 U.S.C. § 11001-11050, and all other laws, statutes, ordinances, rules and regulations of any local, state or federal governmental authority having jurisdiction concerning environmental, health and safety matters (collectively, "Environmental Laws"), including, but not limited to, any discharge into the air, surface, water, sewers, soil or groundwater of any Hazardous Material (as defined in Article 29.11(c)), whether within or outside the Premises within the Complex. Tenant shall comply with all terms, conditions and guidelines contained in the MWRA permit applicable to the Premises and agrees to acknowledge such agreement to so comply in writing upon request of Landlord. Notwithstanding the foregoing, nothing contained in this Lease requires, or shall be construed to require, Tenant to incur any liability related to or arising from environmental conditions (i) for which the Landlord is responsible pursuant to the terms of this Lease, or (ii) which existed within the Premises or the Complex prior to the date Tenant takes possession of the Premises.

(b) Tenant shall not cause or permit any Hazardous Material to be brought upon, kept or used in or about the Premises or otherwise in the Complex by Tenant, its agents, employees, contractors or invitees, without the prior written consent of Landlord, except for

Hazardous Materials which are typically used in the operation of offices or laboratories, provided that such materials are stored, used and disposed of in strict compliance with all applicable Environmental Laws and with good scientific and medical practice. Within five (5) days of Landlord's request, Tenant shall provide Landlord with a list of all Hazardous Materials, including quantities used and such other information as Landlord may reasonably request, used by Tenant in the Premises or otherwise in the Complex. Notwithstanding the foregoing, with respect to any of Tenant's Hazardous Material which Tenant does not properly handle, store or dispose of in compliance with all applicable Environmental Laws and good scientific and medical practice. Tenant shall, upon written notice from Landlord, no longer have the right to bring such material into the Premises. Building of which the Premises is a part or the Complex until Tenant has demonstrated, to Landlord's reasonable satisfaction, that Tenant has implemented programs to thereafter properly handle, store or dispose of such material.

(c) As used herein, the term "Hazardous Material" means any hazardous or toxic substance, material or waste or petroleum derivative which is or becomes regulated by any Environmental Law, specifically including live organisms, viruses and fungi, medical waste, and so-called "biohazard" materials. The term "Hazardous Material" includes, without limitation, any material or substance which is(i) designated as a "hazardous substance" pursuant to Section 1311 of the Federal Water Pollution Control Act (33 U.S.C. Section 1317), (ii) defined as a "hazardous waste" pursuant to Section 1004 of the Federal Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq. (42 U.S.C. Section 6903), (iii) defined as a "hazardous substance" pursuant to Section 101 of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Section 9601 et seq. (42 U.S.C. Section 9601), (iv) defined as "hazardous substance" or "oil" under Chapter 21E of the General Laws of Massachusetts, or (v) a so-called "biohazard" or medical waste, or is contaminated with blood or other bodily fluids; and "Environmental Laws" include, without limitation, the laws listed in the preceding clauses (i) through (iv).

(d) Any increase in the premium for necessary insurance on the Premises or the Complex which arises from Tenant's use and/or storage of these Hazardous Materials shall be solely at Tenant's expense. Tenant shall procure and maintain at its sole expense such additional insurance as may be necessary

to comply with any requirement of any federal, state or local government agency with jurisdiction.

(e) Tenant hereby covenants and agrees to indemnify, defend and hold Landlord harmless from any and all claims, judgments, damages, penalties, fines, costs, liabilities or losses (collectively "Losses") which Landlord may reasonably incur arising out of contamination of real estate, the Complex or other property not a part of the Premises, which contamination arises as a result of: (i) the presence of Hazardous Material in the Premises, the presence of which is caused or permitted by Tenant, or (ii) from a breach by Tenant of its obligations under this Article 29.11. This indemnification of Landlord by Tenant includes, without limitation, reasonable costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal or restoration work required by any federal, state or local governmental agency or political subdivision because of Hazardous Material present in the soil or ground water on or under the Premises based upon the circumstances identified in the first sentence of this Article 29.11(e). The indemnification and hold harmless obligations of Tenant under this Article 29.11(e) shall survive any termination of this Lease. Without limiting the

foregoing, if the presence of any Hazardous Material in the Building or otherwise in the Complex caused or permitted by Tenant results in any contamination of the Premises, Tenant shall promptly take all actions at its sole expense as are necessary to return the Premises to a condition which complies with all Environmental Laws; provided that Landlord's approval of such actions shall first be obtained, which approval shall not be unreasonably withheld so long as such actions, in Landlord's reasonable discretion, would not potentially have any materially adverse long-term or short-term effect on the Premises, and, in any event, Landlord shall not withhold its approval of any proposed actions which are required by applicable Environmental Laws.

(f) On or before the date that Tenant, and anyone claiming by, through or under Tenant, vacates the Premises, and immediately prior to the time that Tenant delivers the Premises to Landlord, Tenant shall:

(1) Cause the Premises to be decommissioned in accordance with the regulations of the U.S. Nuclear Regulatory Commission and/or the Massachusetts Department of Public Health for the control of radiation, cause the Premises to be released for unrestricted use by the Radiation Control Program of the Massachusetts Department of Public Health for the control of radiation, and deliver to Landlord the report of a certified industrial hygienist stating that he or she has examined the Premises (including visual inspection, Geiger counter evaluation and airborne and surface monitoring) and found no evidence that such portion contains Hazardous Materials, as defined in this Article 29.11, or is otherwise in violation of any Environmental Law, as defined in this Article 29.11 hereof.

(2) Provide to Landlord a copy of its most current chemical waste removal manifest and a certification from Tenant executed by an officer of Tenant that no Hazardous Materials or other potentially dangerous or harmful chemicals brought onto the Premises from and after the date that Tenant first took occupancy of the Premises remain in the Premises.

29.12 Patriot Act.

Tenant represents and warrants to Landlord that:

(A) Tenant is not in violation of any Anti-Terrorism Law

(B) Tenant is not, as of the date hereof:

(i) conducting any business or engaging in any transaction or dealing with any Prohibited Person (as hereinafter defined), including the making or receiving of any contribution of funds, goods or services to or for the benefit of any Prohibited Person;

(ii) dealing in, or otherwise engaging in any transaction relating to, any property or interests in property blocked pursuant to Executive Order No. 13224; or

(iii) engaging in or conspiring to engage in any transaction that evades or avoids, or has the purpose of evading or avoiding, or attempts to violate any of the prohibitions set forth in, any Anti-Terrorism Law; and

(C) Neither Tenant nor any of its affiliates, officers, directors, shareholders, members or lease guarantor, as applicable, is a Prohibited Person.

If at any time any of these representations becomes false, then it shall be considered a material default under this Lease.

As used herein, "Anti-Terrorism Law" is defined as any law relating to terrorism, anti-terrorism, money-laundering or anti-money laundering activities, including without limitation the United States Bank Secrecy Act, the United States Money Laundering Control Act of 1986, Executive Order No. 13224, and Title 3 of the USA Patriot Act, and any regulations promulgated under any of them. As used herein "Executive Order No. 13224" is defined as Executive Order No. 13224 on Terrorist Financing effective September 24, 2001, and relating to "Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism", as may be amended from time to time. "Prohibited Person" is defined as (i) a person or entity that is listed in the Annex to Executive Order No. 13224, or a person or entity owned or controlled by an entity that is listed in the Annex to Executive Order No. 13224; (ii) a person or entity with whom Landlord is prohibited from dealing or otherwise engaging in any transaction by any Anti-Terrorism Law; or (iii) a person or entity that is named as a "specially designated national and blocked person" on the most current list published by the U.S. Treasury Department Office of Foreign Assets Control at its official website, http://www.treas.gov/ofac/tllsdn.pdf or at any replacement website or other official publication of such list. "USA Patriot Act" is defined as the "Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001" (Public Law 107-56), as may be amended from time to time.

29.13 Security Deposit/Letter of Credit. In order to secure Tenant's obligations to Landlord under this Lease, Tenant shall deliver to Landlord, on the date that Tenant executes and delivers the Lease to Landlord, an Irrevocable Standby Letter of Credit ("Letter of Credit") which shall be (1) in the form attached hereto as Exhibit 5A, (2) issued by a bank reasonably acceptable to Landlord with minimum assets of Ten Billion Dollars ($10,000,000,000.00), upon which presentment may be made in Boston, Massachusetts, (3) in an amount equal to One Hundred Thirteen Thousand and Ninety-Eight and 06/100 ($113,098.06) Dollars, and (4) for a term of not less than one (1) year, subject to extension in accordance with the terms of the Letter of Credit. In the event of a change of

circumstance relating to the bank issuing the Letter of Credit, or if Landlord otherwise believes that the financial condition of the issuing bank has been degraded, Landlord reserves the right to require Tenant to replace the Letter of Credit from time to time with a similar letter of credit issued by another bank satisfactory to Landlord. Tenant shall, on or before the date thirty (30) days prior to the expiration of the term of such Letter of Credit, deliver to Landlord a new Letter of Credit satisfying the foregoing conditions ("Substitute Letter of Credit") in lieu of the Letter of Credit then being held by Landlord. Such Letter of Credit shall be automatically renewable provided that if the issuer of such Letter of Credit gives notice of its election not to renew such Letter of Credit for any additional period pursuant thereto, Tenant shall be required to deliver a Substitute Letter of Credit satisfying the conditions hereof, on or before the

date thirty (30) days prior to the expiration of the term of such Letter of Credit. Tenant agrees that it shall from time to time, as necessary, whether as a result of a draw on the Letter of Credit by Landlord pursuant to the terms hereof or as a result of the expiration of the Letter of Credit then in effect, renew or replace the original and any subsequent Letter of Credit so that a Letter of Credit, in the amount required hereunder, is in effect throughout term of this Lease, including any extensions thereof, or in the event that Tenant remains in possession of the Premises following the expiration of the term, or if Tenant has obligations hereunder to Landlord that remain unsatisfied following the expiration of the term (as may be extended), and for ninety (90) days after the latest to occur of the foregoing (i.e., the expiration of the term (as may be extended), the date on which Tenant vacates and yields up the premises, etc.). If Tenant fails to furnish such renewal or replacement at least 30 days prior to the stated expiration date of the Letter of Credit then held by Landlord, Landlord may draw upon such Letter of Credit and hold the proceeds thereof (and such proceeds need not be segregated) as a security deposit pursuant to the terms of this Article 29.13.

In the event that Tenant is in default of its obligations under the Lease beyond applicable notice and cure periods, then the Landlord shall have the right, at any time after such event, without giving any further notice to Tenant, to draw down from said Letter of Credit (Substitute Letter of Credit or Additional Letter of Credit, as defined below, as the case may be) (a) the amount necessary to cure such default or (b) if such default cannot reasonably be cured by the expenditure of money, to exercise all rights and remedies Landlord may have on account of such default, the amount which, in Landlord's opinion, is necessary to satisfy Tenant's liability on account thereof. In the event of any such draw by the Landlord, Tenant shall, within fifteen (15) business days of written demand therefor, deliver to Landlord an additional Letter of Credit satisfying the foregoing conditions ("Additional Letter of Credit"), except that the amount of such Additional Letter of Credit shall be the amount of such draw. In addition, in the event of a termination based upon the default of Tenant under the Lease, or a rejection of the Lease pursuant to the provisions of the Federal Bankruptcy Code, Landlord shall have the right to draw upon the Letter of Credit (from time to time, if necessary) to cover the full amount of damages and other amounts due from Tenant to Landlord under the Lease. Any amounts so drawn shall, at Landlord's election, be applied first to any unpaid rent and other charges which were due prior to the filing of the petition for protection under the Federal Bankruptcy Code. Tenant hereby covenants and agrees not to oppose, contest or otherwise interfere with any attempt by Landlord to draw down from said Letter of Credit including, without limitation, by commencing an action seeking to enjoin or restrain Landlord from drawing upon said Letter of Credit. Tenant also hereby expressly waives any right or claim it may have to seek such equitable relief. In addition to whatever other rights and remedies it may have against Tenant if Tenant breaches its obligations under this paragraph, Tenant hereby acknowledges that it shall be liable for any and all damages which Landlord may suffer as a result of any such breach.

Upon request of Landlord or any (prospective) purchaser or mortgagee of the Building, Tenant shall, at its expense, cooperate with Landlord in obtaining an amendment to or replacement of any Letter of Credit which Landlord is then holding so that the amended or new Letter of Credit reflects the name of the new owner of the Building or mortgagee, as the case may be.

To the extent that Landlord has not previously drawn upon any Letter of Credit, Substitute Letter of Credit, Additional Letter of Credit or Security Proceeds (collectively "Collateral") held by the Landlord, and to the extent that Tenant is not otherwise in default of its obligations under

the Lease as of the termination date of the Lease, Landlord shall return such Collateral to Tenant on the termination of the term of the Lease.

In no event shall the proceeds of any Letter of Credit be deemed to be a prepayment of rent nor shall it be considered as a measure of liquidated damages.

29.14 Parking. Commencing as of the Term Commencement Date and continuing thereafter throughout the term of the Lease, the Landlord will make available to Tenant nine (9) monthly parking passes for use in the One Kendall Square Garage (the "Garage") which Landlord represents and warrants is owned in fee by it. Tenant shall have no right to sublet, assign, or otherwise transfer said parking passes except in connection with an assignment of this Lease or sublease of the Premises which is permitted pursuant to the provisions of this Lease. Said parking passes shall be paid for by Tenant at the then current prevailing rate in the Garage, as such rate may vary from time to time. The current rate for such passes as of the Execution Date of this Lease is $220.00 per month. Subject to availability, Tenant shall have the option to obtain additional passes at such rate on a month-to-month basis. If, for any reason, Tenant shall fail timely to pay the charge for said parking passes, Landlord shall have the same rights against Tenant as Landlord has with respect to the timely payment of Yearly Rent hereunder. Said parking passes will be on an unassigned, non-reserved basis, and shall be subject to reasonable rules and regulations from time to time in force. Tenant shall have the right, from time to time upon at least thirty (30) days prior written notice to Landlord, to surrender one or more of such parking passes, and upon such surrender, Tenant shall have no further rights or obligations with respect to such surrendered passes.

29.15 Tenant's Option to Extend the Term of the Lease.

A. On the conditions, which conditions Landlord may waive, at its election, by written notice to Tenant at any time, that Tenant is not in default beyond all applicable cure periods of its covenants and obligations under the Lease, and that Catabasis Pharmaceuticals, Inc., itself, or an Assignee (as defined in Article 16), is occupying at least fifty percent (50%) of the Premises then demised to Tenant, both as of the time of option exercise and as of the commencement of the hereinafter described additional term, Tenant shall have the option to extend the term of this Lease for one (1) additional five (5) year term, such additional term commencing as of the next day following the expiration of the initial term of this Lease. Tenant may exercise such option to extend by giving Landlord written notice on or before the date that is not less than nine (9) full calendar months prior to the last day of the initial term of this Lease. Upon the timely giving of such notice, the term of this Lease shall be deemed extended upon all of the terms and conditions of this Lease, except that Landlord shall have no obligation to construct or renovate the Premises and that the Yearly Rent during such additional term shall be as hereinafter set forth. If Tenant fails to give timely notice, as aforesaid, Tenant shall have no further right to extend the term of this Lease, time being of the essence of this Article 29.15. If Tenant fails to timely exercise its rights hereunder, then within seven (7) days of Landlord's request therefor, Tenant shall execute and deliver to Landlord a certification, in recordable form, confirming the Tenant's failure to exercise (or waiver of) such right, and Tenant's failure to so execute and deliver such certification shall (without limiting Landlord's remedies on account thereof) entitle Landlord to execute and deliver to any third party, and record, an affidavit confirming the failure or waiver, which affidavit shall be binding on Tenant and may be conclusively relied on by third parties.

B. Yearly Rent. The Yearly Rent during the additional term shall be based upon the Fair Market Rental Value, as defined in Article 29.16, as of the commencement of the additional term, of the Premises then demised to Tenant.

C. Tenant shall have no further option to extend the term of the Lease other than the one (1) additional five (5) year extension term herein provided.

D. Notwithstanding the fact that, upon Tenant's exercise of the herein option to extend the term of the Lease, such extension shall be self executing, as aforesaid, the parties shall promptly execute a lease amendment reflecting such additional term after Tenant exercises the herein option, except that the Yearly Rent payable in respect of such additional term may not be set forth in said amendment. Subsequently, after such Yearly Rent is determined, the parties shall execute a written agreement confirming the same. The execution of such lease amendment shall not be deemed to waive any of the conditions to Tenant's exercise of its rights under this Article 29.15, unless otherwise specifically provided in such lease amendment.

29.16 Definition of Fair Market Rental Value.

A. "Fair Market Rental Value" shall be computed as of the date in question at the then current Yearly Rent, including provisions for subsequent increases and other adjustments for leases or agreements to lease then currently being negotiated, or executed in comparable space located in the Complex, or if no such leases or agreements to lease are then currently being negotiated or executed in the Complex, the Fair Market Rental Value shall be determined by reference to leases or agreements to lease then currently being negotiated or executed for comparable space located elsewhere in first-class office buildings located in East Cambridge, Massachusetts. In determining Fair Market Rental Value, all relevant factors shall be taken into account and given effect, including, without limitation: size, location and condition of Premises, lease term, including renewal options, tenant's obligations with respect to operating expenses and taxes, tenant improvement allowances, condition of building, and services and amenities provided by the Landlord.

B. Dispute as to Fair Market Rental Value:

Landlord shall initially designate Fair Market Rental Value and Landlord shall furnish data in support of such designation. If Tenant disagrees with Landlord's designation of a Fair Market Rental Value, Tenant shall notify Landlord, by written notice given within thirty (30) days after Tenant has been notified of Landlord's designation, of its disagreement whereupon the parties shall negotiate in good faith to arrive at a mutually agreeable Fair Market Rental Value. If the parties are unable to agree within thirty (30) days after Tenant's notice to Landlord, the parties shall submit such Fair Market Rental Value to arbitration. Fair Market Rental Value shall be submitted to arbitration as follows: Fair Market Rental Value shall be determined by impartial arbitrators, one to be chosen by the Landlord, one to be chosen by Tenant, and a third to be selected, if necessary, as below provided. The unanimous written decision of the two first chosen, without selection and participation of a third arbitrator, or otherwise, the written decision of a majority of three arbitrators chosen and selected as aforesaid, shall be conclusive and binding upon Landlord and Tenant. Landlord and Tenant shall each notify the other of its chosen arbitrator within ten (10) days following the call for arbitration and, unless such two arbitrators

shall have reached a unanimous decision within thirty (30) days after their designation, they shall so notify the President of the Boston Bar Association (or such organization as may succeed to said Boston Bar Association) and request him or her to select an impartial third arbitrator. All arbitrators shall have at least ten (10) years of professional experience as an office building owner, real estate manager or real estate broker dealing with like types of properties, to determine Fair Market Rental Value as herein defined. Such third arbitrator and the first two chosen shall, subject to commercial arbitration rules of the American Arbitration Association, hear the parties and their evidence and render their decision within thirty (30) days following the conclusion of such hearing and notify Landlord and Tenant thereof. Landlord and Tenant shall bear the expense of the third arbitrator (if any) equally. The decision of the arbitrators shall be binding and conclusive, and judgment upon the award or decision of the arbitrators may be entered in the appropriate court of law (as identified on Exhibit 1); and the parties consent to the jurisdiction of such court and further agree that any process or notice of motion or other application to the Court or a Judge thereof may be served outside the Commonwealth of Massachusetts by registered mail or by personal service, provided a reasonable time for appearance is allowed. If the dispute between the parties as to a Fair Market Rental Value has not been resolved before the commencement of Tenant's obligation to pay rent based upon such Fair Market Rental Value, then Tenant shall pay Yearly Rent and other charges under the Lease in respect of the Premises in question based upon the Fair Market Rental Value designated by Landlord until either the agreement of the parties as to the Fair Market Rental Value, or the decision of the arbitrators, as the case may be, at which time Tenant shall pay any underpayment of rent and other charges to Landlord, or Landlord shall refund any overpayment of rent and other charges to Tenant.

29.17 Right of First Refusal to Lease. Provided this Lease is in full force and effect and Tenant is not in default hereunder beyond all applicable cure periods, if at any time during the term of this Lease, Landlord shall receive a bona fide offer (the "Offer") from any third party to lease the approximate 4,692 rentable square feet of space of the first (1st) floor of the Building as shown on the plan attached hereto as Exhibit 6 (the "ROFR Space"), and which Offer Landlord is prepared to accept, Landlord shall notify Tenant (the "Right of First Refusal Notice") of Landlord's intent to accept such Offer. The Right of First Refusal Notice shall specify (i) the location and rentable area of the space which Landlord intends to lease; (ii) the date upon which such space shall be available for occupancy; (iii) the annual rate of base rent per square foot of rentable area which Landlord intends to charge for such space, including all fixed and/or indexed adjustments to said rate; (iv) the proposed lease term for such space; and (v) all other economic terms which Landlord intends to offer with respect to such space. Tenant shall have the right (the "Right of First Refusal"), exercisable by Tenant in writing, within five (5) business days of Tenant's receipt of the Right of First Refusal Notice, to elect to lease the ROFR Space and within five (5) business days thereafter Landlord and Tenant shall enter into a supplemental agreement to this Lease pursuant to which Tenant shall lease the ROFR space on the same terms and conditions specified in the Offer.

Should Tenant decline the Right of First Refusal or fail to accept its right to lease the ROFR Space in writing within five (5) business days of receipt of the Right of First Refusal Notice, then Landlord shall be free to lease such space to the offering third party on terms substantially the same as those set forth in the Offer and the Right of First Refusal under this Section 29.17 shall become null and void. If, within six (6) months of the date on which Tenant either declines the Right of First Refusal or fails to accept its right to lease the ROFR Space, the

Landlord does not enter into a definitive lease agreement with the third party making the Offer on terms that are substantially similar to those set forth in the Offer, the rights and obligations of this Section 29.17 shall again be of full force and effect and Landlord must follow the procedures set forth herein if and when it receives a subsequent Offer from a third party to lease the ROFR Space.

If Tenant exercises its Right of First Refusal, then Landlord shall tender the ROFR Space, as provided above, to Tenant in its then "as is" condition (or otherwise in accordance with the terms set forth on the Right of First Refusal Notice) within the time frame for availability for occupancy set forth in the Right of First Refusal Notice and the term of the Lease with regard to the ROFR Space shall be as set forth in the Right of First Refusal Notice. If the term of the existing Premises expires before the term of the ROFR Space as set forth in the Right of First Refusal Notice then the term of the existing Premises shall be extended to run conterminously with the term of the ROFR Space and the Yearly Rent on the existing Premises after the expiration of term shall be the same as the Yearly Rent on the ROFR Space (excluding any portion of said rent based upon a tenant improvement allowance or work to be completed by Landlord).

The foregoing Right of First Refusal under this Section 29.17 is personal to and may only be exercised by Catabasis Pharmaceuticals, Inc., the original named tenant under this Lease, while Catabasis Pharmaceuticals, Inc. continues to occupy the Premises. The foregoing Right of First Refusal under this Section 29.17 shall not be exercisable by an assignee under this Lease or subleasee of all or a portion of the Premises except for an Assignee as defined in Article 16 of this Lease.

Tenant understands that its right under this Section are and shall be subject to and subordinate to any extension rights contained in the lease of the tenant of the offered space and the right of Landlord to extend the term of the lease with the tenant of the offered space even if its lease has no such extension right, and any expansion rights, options to lease or any rights of first negotiation, first offer or first refusal to lease granted to other tenants in the Building or Complex prior to the date of execution and delivery of this Lease.

29.18 Confidentiality.

(a) In connection with the activities contemplated by this Lease, it is anticipated that Tenant may disclose or deliver to Landlord, or provide access to Landlord, to scientific or technical information, and business or financial information, possessed or obtained by, developed for or given to Tenant which is treated by Tenant as confidential or proprietary ("Confidential Information"). Tenant will, to the extent practical, use commercially reasonable efforts, consistent with reasonable business practices, to label or identify as "CONFIDENTIAL" all the Confidential Information. Confidential Information will, however, include all information which due to its nature would cause a reasonable person to know that it is confidential and proprietary to Tenant.

(b) Landlord agrees that it will hold in confidence and not publish, disseminate or otherwise disclose, or deliver or make available to any third party outside its organization any Confidential Information, except as otherwise contemplated herein or as specifically authorized in writing by Tenant. Landlord agrees to use the Confidential Information solely in connection with the activities contemplated by this Lease and not exploit the Confidential Information for its own

benefit or the benefit of another without the prior written consent of Tenant. Landlord will exercise commercially reasonable precautions to physically protect the integrity and confidentiality of the Confidential Information. Landlord may disseminate the Confidential Information only to its employees and consultants, and to its prospective and existing lenders and purchasers of the Building and/or Complex, on a need-to-know basis in connection with the activities contemplated by this Lease or for the purpose of evaluating the Complex and only if they are advised to protect the Confidential Information under terms substantially similar to those in this Lease. Landlord will have no obligation of confidentiality with respect to any portion of Confidential Information disclosed to it which:

(1) is or later becomes generally available to the public by use, publication or the like, through no fault of Landlord;

(2) is obtained from a third party without restriction who had the legal right to disclose the same to Landlord;

(3) Landlord already possesses, as evidenced by its written records, predating receipt thereof from Tenant (whether as a result of disclosure or delivery by Tenant or of Tenant providing access);

(4) is independently developed by Landlord without the use of Confidential Information, as evidenced by Landlord's written records; or

(5) is disclosed by Landlord pursuant to a requirement of law.

If required, Landlord may disclose the Confidential Information to a governmental authority or by order of a court of competent jurisdiction, provided that the disclosure is subject to all applicable governmental or judicial protection available for like material (provided, however, that the cost and expense to obtain any such protection shall be borne by Tenant) and reasonable advance written notice is given to Tenant.

Confidential Information will not be deemed to be in the public domain or in the possession of Landlord merely because it is embraced by generalized disclosures in the public domain nor will a combination of Confidential Information be deemed to fall within any of the exceptions set forth above simply because each of the elements is itself included within an exception if the significance of the combination does not fall within any of the exceptions.

(c) It is understood that all Confidential Information, and any information derived from it by Landlord, will remain the property of Tenant, and that no patent right or license is hereby granted by Tenant to Landlord by this Agreement. Nothing in this Agreement will be deemed an obligation of Tenant to grant Landlord any rights in and to the subject matter of the Confidential Information.

(d) Upon expiration of the term of this Lease and after written request by Tenant, or sooner upon Tenant's request, Landlord will promptly return to Tenant all tangible Confidential Information, then in Landlord's possession, including all copies and reproductions thereof, except for one (1) copy that may be retained by Landlord solely for archival purposes.

Landlord agrees that money damages would not be a sufficient remedy for any breach of this Section and that, in addition to all other remedies, Tenant will be entitled to injunctive or other equitable relief as a remedy for any such breach by Landlord.

29.19 Termination Right.

Tenant shall have the option, but not the obligation, to terminate this Lease by providing five (5) business days written notice of such termination to Landlord, upon the occurrence of any of the following:

(a) Landlord no longer owns, possesses or controls the Building or Premises pursuant to a foreclosure action or Landlord's surrender of the Premises to Landlord's mortgagee(s) and such mortgagee(s) have not provided Tenant with an SNDA pursuant to Section 23(h) of this Lease; or

(b) Landlord still owns, possesses or controls the Building and Premises, Landlord's mortgagee(s) have not provided Tenant with an SNDA pursuant to Section 23(h) of this Lease and an uncured Landlord TI Default exists.

Tenant's exercise of the foregoing termination right may be nullified if, within the five (5) business day notice period, the conditions giving rise to the termination right are remedied. In the event that Tenant terminates this Lease pursuant to this Section 29.19 this Lease shall be null and void and Tenant shall have no further obligations under this Lease.

IN WITNESS WHEREOF the parties hereto have executed this Indenture of Lease in multiple copies, each to be considered an original hereof, as a sealed instrument on the day and year noted in Exhibit 1 as the Execution Date.

LANDLORD:	TENANT:
RB KENDALL FEE, LLC	CATABASIS PHARMACEUTICALS.
INC.	
By: /s/ Robert L. Beal	By: /s/ Jill C. Milne
Name: Robert L. Beal	(Name) Jill C. Milne
Title: Its Authorized Signatory	(Title) CEO
	Hereunto Duly Authorized

IF TENANT IS A CORPORATION, A SECRETARY'S OR CLERK'S CERTIFICATE OF THE AUTHORITY AND THE INCUMBENCY OF THE PERSON SIGNING ON BEHALF OF TENANT SHOULD BE ATTACHED.

EXHIBIT 2
LEASE PLAN

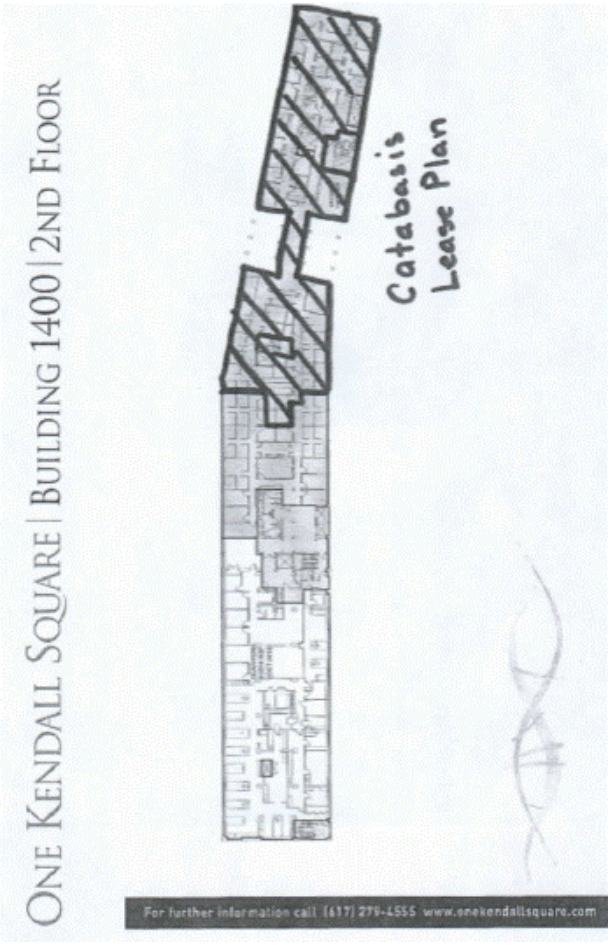

Exhibit 2A
SPACE PLANS

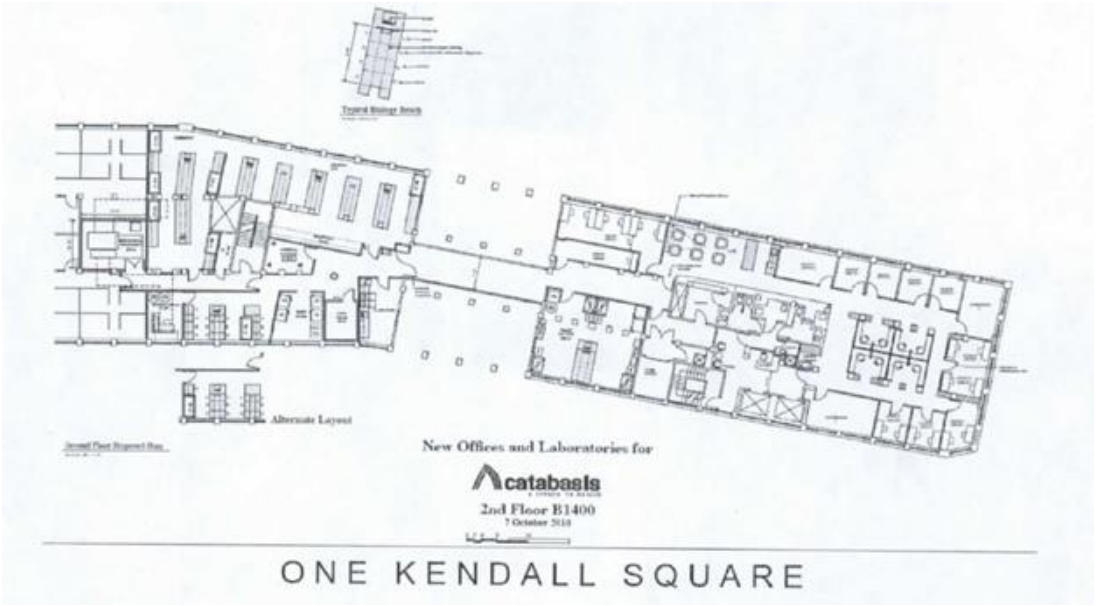

EXHIBIT 3
PLAN OF COMPLEX

EXHIBIT 4
TERM COMMENCEMENT DATE AGREEMENT

(“Tenant”) hereby certifies that it has entered into a lease with RB KENDALL FEE, LLC (“Landlord”) dated 20 **[, as amended by dated , 20 ,]** and verifies the following information as of the day of, 200 :

Address of Building:	Building , One Kendall Square, Cambridge, MA 02139
Number of Rentable Square Feet in Premises:	r.s.f.
Term Commencement Date:	, 20
Rent Commencement Date:	, 20
Lease Termination Date:	, 20
Tenant’s Proportionate Common Share:	%
Tenant’s Proportionate Building Share:	%

Tenant acknowledges and agrees that all improvements Landlord is obligated to make to the Premises, if any, have been completed to Tenant's satisfaction, that Tenant has accepted possession of the Premises, and that as of the date hereof, there exist no offsets or defenses to the obligations of Tenant under the Lease.

TENANT:

_____

By: _____
Name: _____
Title: _____
Hereunto duly authorized

LANDLORD:

RB KENDALL FEE, LLC

By: _____
Name: Robert L. Beal
Title: Its Authorized Signatory

EXHIBIT 5

FORM OF LETTER OF CREDIT

IRREVOCABLE STANDBY LETTER OF CREDIT NO.

DATE:

BENEFICIARY*:*
RB KENDALL FEE, LLC
c/o Beal and Company, Inc.
177 Milk Street
Boston, MA 02109
AS "LANDLORD"

APPLICANT:

Building
One Kendall Square, MA 02139
AS "TENANT"

AMOUNT: US $ (AND 00/100 U.S. DOLLARS)

EXPIRATION DATE:

LOCATION: AT OUR COUNTERS IN BOSTON, MASSACHUSETTS

DEAR SIR/MADAM:

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. IN YOUR FAVOR AVAILABLE BY YOUR DRAFT DRAWN ON US AT SIGHT IN THE FORM OF EXHIBIT "B" ATTACHED AND ACCOMPANIED BY THE FOLLOWING DOCUMENTS:

1. THE ORIGINAL OF THIS LETTER OF CREDIT AND ALL AMENDMENT(S), IF ANY.
2. A DATED CERTIFICATION FROM THE BENEFICIARY SIGNED BY AN AUTHORIZED OFFICER OR AGENT, FOLLOWED BY ITS DESIGNATED TITLE, STATING THE FOLLOWING:

(A) "THE AMOUNT REPRESENTS FUNDS DUE AND OWING TO US FROM APPLICANT PURSUANT TO THAT CERTAIN LEASE BY AND BETWEEN BENEFICIARY, AS LANDLORD, AND APPLICANT, AS TENANT."

OR

(B) "WE HEREBY CERTIFY THAT WE HAVE RECEIVED NOTICE FROM BANK THAT LETTER OF CREDIT NO. WILL NOT BE RENEWED, AND THAT WE HAVE NOT RECEIVED A REPLACEMENT OF THIS LETTER OF CREDIT FROM APPLICANT SATISFACTORY TO US AT LEAST THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE OF THIS LETTER OF CREDIT."

IRREVOCABLE STANDBY LETTER OF CREDIT NO.
DATED

THE LEASE AGREEMENT MENTIONED ABOVE IS FOR IDENTIFICATION PURPOSES ONLY AND IT IS NOT INTENDED THAT SAID LEASE AGREEMENT BE INCORPORATED HEREIN OR FORM PART OF THIS LETTER OF CREDIT.

OUR OBLIGATION UNDER THIS CREDIT SHALL NOT BE AFFECTED BY ANY CIRCUMSTANCES, CLAIM OR DEFENSE, REAL OR PERSONAL, OF ANY PARTY AS TO THE ENFORCEABILITY OF THE LEASE BETWEEN YOU AND TENANT, IT BEING UNDERSTOOD THAT OUR OBLIGATION SHALL BE THAT OF A PRIMARY OBLIGOR AND NOT THAT OF A SURETY, GUARANTOR OR ACCOMMODATION MAKER. IF YOU DELIVER THE WRITTEN CERTIFICATE REFERENCED ABOVE TO US, (I) WE SHALL HAVE NO OBLIGATION TO DETERMINE WHETHER ANY OF THE STATEMENTS THEREIN ARE TRUE, (II) OUR OBLIGATIONS HEREUNDER SHALL NOT BE AFFECTED IN ANY MANNER WHATSOEVER IF THE STATEMENTS MADE IN SUCH CERTIFICATE ARE UNTRUE IN WHOLE OR IN PART, AND (III) OUR OBLIGATIONS

HEREUNDER SHALL NOT BE AFFECTED IN ANY MANNER WHATSOEVER IF TENANT DELIVERS INSTRUCTIONS OR CORRESPONDENCE TO WHICH EITHER (A) DENIES THE TRUTH OF THE STATEMENT SET FORTH IN THE CERTIFICATE REFERRED TO ABOVE, OR (B) INSTRUCTS US NOT TO PAY BENEFICIARY ON THIS CREDIT FOR ANY REASON WHATSOEVER.

PARTIAL AND MULTIPLE DRAWS ARE ALLOWED. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS LETTER OF CREDIT MUST ACCOMPANY ANY DRAWINGS HEREUNDER FOR ENDORSEMENT OF THE DRAWING AMOUNT AND WILL BE RETURNED TO THE BENEFICIARY UNLESS IT IS FULLY UTILIZED.

DRAFT(S) AND DOCUMENTS MUST INDICATE THE NUMBER AND DATE OF THIS LETTER OF CREDIT.

THIS LETTER OF CREDIT SHALL BE AUTOMATICALLY EXTENDED FOR AN ADDITIONAL PERIOD OF ONE YEAR, WITHOUT AMENDMENT, FROM THE PRESENT OR EACH FUTURE EXPIRATION DATE UNLESS AT LEAST SIXTY (60) DAYS PRIOR TO THE THEN CURRENT EXPIRATION DATE WE NOTIFY YOU BY REGISTERED MAIL/OVERNIGHT COURIER SERVICE AT THE ABOVE ADDRESSES THAT THIS LETTER OF CREDIT WILL NOT BE EXTENDED BEYOND THE CURRENT EXPIRATION DATE. IN NO EVENT SHALL THIS LETTER OF CREDIT BE AUTOMATICALLY EXTENDED BEYOND SIX (6) MONTHS BEYOND LEASE EXPIRATION.

THIS LETTER OF CREDIT MAY BE TRANSFERRED WITHOUT COST TO THE BENEFICIARY, ONE OR MORE TIMES BUT IN EACH INSTANCE TO A SINGLE BENEFICIARY AND ONLY IN THE FULL AMOUNT AVAILABLE TO BE DRAWN UNDER THE LETTER OF CREDIT AT THE TIME OF THE TRANSFER AND ONLY BY THE ISSUING BANK UPON OUR RECEIPT OF THE ATTACHED “EXHIBIT A” DULY COMPLETED AND EXECUTED BY THE BENEFICIARY AND ACCOMPANIED BY THE ORIGINAL LETTER OF CREDIT AND ALL AMENDMENTS, IF ANY.

ALL DEMANDS FOR PAYMENT SHALL BE MADE BY PRESENTATION OF THE ORIGINAL APPROPRIATE DOCUMENTS PRIOR TO 10:00 A.M. E.S.T. TIME, ON A BUSINESS DAY AT OUR OFFICE (THE “BANK’S OFFICE”) AT:

BOSTON, MASSACHUSETTS , ATTENTION: OR BY FACSIMILE TRANSMISSION AT: (617) - ; AND SIMULTANEOUSLY UNDER TELEPHONE ADVICE TO: (617) - , ATTENTION: WITH ORIGINALS TO FOLLOW BY OVERNIGHT COURIER SERVICE.

IRREVOCABLE STANDBY LETTER OF CREDIT NO.
DATED

PAYMENT AGAINST CONFORMING PRESENTATIONS HEREUNDER SHALL BE MADE BY BANK DURING NORMAL BUSINESS HOURS OF THE BANK’S OFFICE WITHIN ONE (1) BUSINESS DAY AFTER PRESENTATION.

WE HEREBY AGREE WITH THE DRAWERS, ENDORSERS AND BONAFIDE HOLDERS THAT THE DRAFTS DRAWN UNDER AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS LETTER OF CREDIT SHALL BE DULY HONORED UPON PRESENTATION TO THE DRAWEE, IF NEGOTIATED ON OR BEFORE THE EXPIRATION DATE OF THIS CREDIT.

THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION), INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500.

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

EXHIBIT “A”

DATE:

TO:

RE: STANDBY LETTER OF CREDIT
NO. ISSUED BY

ATTN:

L/C AMOUNT:

LADIES AND GENTLEMEN:

FOR VALUE RECEIVED, THE UNDERSIGNED BENEFICIARY HEREBY IRREVOCABLY TRANSFERS TO:

(NAME OF TRANSFEREE)
(ADDRESS)

ALL RIGHTS OF THE UNDERSIGNED BENEFICIARY TO DRAW UNDER THE ABOVE LETTER OF CREDIT UP TO ITS AVAILABLE AMOUNT AS SHOWN ABOVE AS OF THE DATE OF THIS TRANSFER.

BY THIS TRANSFER, ALL RIGHTS OF THE UNDERSIGNED BENEFICIARY IN SUCH LETTER OF CREDIT ARE TRANSFERRED TO THE TRANSFEREE. TRANSFEREE SHALL HAVE THE SOLE RIGHTS AS BENEFICIARY THEREOF, INCLUDING SOLE RIGHTS RELATING TO ANY AMENDMENTS, WHETHER INCREASES OR EXTENSIONS OR OTHER AMENDMENTS, AND WHETHER NOW EXISTING OR HEREAFTER MADE. ALL AMENDMENTS ARE TO BE ADVISED DIRECT TO THE TRANSFEREE WITHOUT NECESSITY OF ANY CONSENT OF OR NOTICE TO THE UNDERSIGNED BENEFICIARY.

THE ORIGINAL OF SUCH LETTER OF CREDIT IS RETURNED HEREWITH, AND WE ASK YOU TO ENDORSE THE TRANSFER ON THE REVERSE THEREOF, AND FORWARD IT DIRECTLY TO THE TRANSFEREE WITH YOUR CUSTOMARY NOTICE OF TRANSFER.

SINCERELY,

(BENEFICIARY'S NAME)

SIGNATURE OF BENEFICIARY

SIGNATURE AUTHENTICATED

(NAME OF BANK)

AUTHORIZED SIGNATURE

EXHIBIT "B"

DATE: REF. NO.

AT SIGHT OF THIS DRAFT

PAY TO THE ORDER OF US$

USDOLLARS

DRAWN UNDER BANK, BOSTON, MASSACHUSETTS, STANDBY LETTER OF CREDIT NUMBER NO. DATED

TO: BANK

, MA (BENEFICIARY'S NAME)

Authorized Signature

EXHIBIT 6
PLAN SHOWING ROFR SPACE

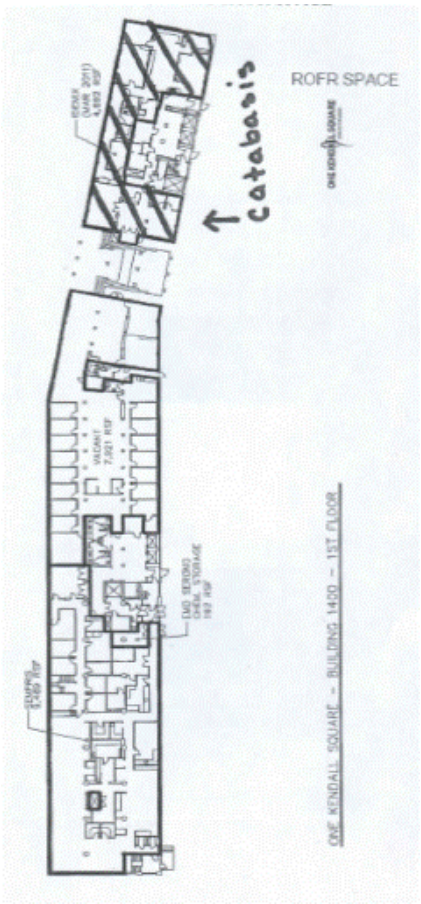

EXHIBIT 7
ESTIMATE DRAFT BUDGET FOR OPERATING YEAR 2011

2011 DRAFT BUDGET
BUILDING 1400 and COMPLEX
OPERATING EXPENSES

Building #1400 — Escalatable Sq. Ft. 129,928

RECOVERABLE OPERATING EXPENSES - BUILDING SPECIFIC

Acct #	Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	$ Per RSF
	RECOVERABLE OPERATING EXPENSES														
	PAYROLL EXPENSE														
7010	Salaries, Mgmt & Admin													0.00	-
7015	Salaries, Mgmt & Admin Temporary													0.00	-
7020	Salaries, Maintenance ST													0.00	-
7030	Salaries, Maintenance OT													0.00	-
7040	Group Insurance													0.00	-
7050	Worker's Compensation													0.00	-
7060	Payroll Taxes													0.00	-
7065	Pension Plan Contribution													0.00	-
		-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
	JANITORIAL/CLEANING														
7110	Janitorial Contract (common area)	1,024.33	1,024.33	982.33	982.33	982.33	982.33	1,024.33	982.33	982.33	1,024.33	1,024.33	1,024.33	11,919.96	0.0917
7111	Miscellaneous Cleaning	150.00	150.00	0.00	0.00	150.00	150.00	150.00	150.00	0.00	0.00	150.00	150.00	1,200.00	0.0092
7112	Janitorial - Tenant Specific	0.00	0.00	505.00	805.00	950.97	950.85	950.85	1,807.70	1,807.70	1,807.70	1,807.70	1,807.70	11,901.55	0.0916
7113	Carpet Cleaning	0.00	0.00	0.00	982.80	0.00	0.00	0.00	0.00	0.00	982.80	0.00	0.00	[illegible]	0.0090
7120	Window Cleaning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	10,300.00	0.0793
7130	Trash Removal Contract	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
7138	Recycling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
7140	Cleaning/Bathroom Supplies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
	Total Janitorial/Cleaning	1,174.33	1,174.33	1,487.33	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	UTILITIES														
7220	Electricity - Building	10,000.00	10,000.00	10,000.00	15,000.00	15,000.00	15,000.00	20,000.00	20,000.00	20,000.00	15,000.00	10,000.00	10,000.00	170,000.00	1.3084
7221	Electricity - Complex	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
7230	Gas	27,000.00	27,000.00	23,000.00	14,000.00	10,000.00	5,000.00	1,000.00	1,000.00	2,500.00	10,000.00	15,000.00	27,000.00	162,500.00	1.2507
7240	Water & Sewer	3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	3,500.00	0.00	0.00	0.00	3,500.00	14,000.00	0.1078
	Total Utilities	40,500.00	37,000.00	33,000.00	32,500.00	25,000.00	20,000.00	21,000.00	24,500.00	22,500.00	25,000.00	25,000.00	40,500.00	346,500.00	[illegible]
	REPAIRS & MAINTENANCE														
7310	HVAC Contract	4,315.63	8,015.63	4,315.63	4,315.63	4,315.63	15,015.64	4,315.63	4,315.63	4,315.63	4,315.63	4,315.63	4,315.63	61,187.57	0.4709
7315	HVAC Repairs & Maintenance	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	42,000.00	0.3233
7320	Plumbing Repairs & Supplies	800.00	800.00	800.00	800.00	1,400.00	800.00	800.00	800.00	800.00	800.00	1,400.00	800.00	10,800.00	0.0831
7325	Electrical Repairs & Supplies	750.00	750.00	7,540.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	750.00	15,790.00	0.1215
7327	Generator Repairs	0.00	0.00	0.00	0.00	595.00	0.00	1,000.00	0.00	0.00	0.00	595.00	0.00	2,190.00	0.0169
7330	Lamps & Ballasts, Site			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
7331	Lamps & Ballasts, Common Area	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	3,000.00	0.0231
7335	Common Area/General Repairs	650.00	650.00	650.00	650.00	650.00	650.00	650.00	650.00	650.00	650.00	650.00	650.00	7,800.00	0.0600
7340	Roof Repairs	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	3,600.00	0.0277
7345	Fees & Licenses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
7350	Maintenance Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
7352	Elevator Service Contract	1,065.32	1,065.32	1,065.32	1,065.32	1,516.32	1,065.32	1,065.32	1,065.32	1,630.54	1,130.54	1,130.54	1,130.54	13,084.72	0.1007
7353	Elevator Services	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	7,200.00	0.0554
7354	Elevator, Telephone	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	1,944.60	0.0150
7355	Glass Replacement	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	2,000.00	0.0154
7360	Painting	0.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10,000.00	0.0770
7370	Carpentry & Hardware, Site													0.00	-
7371	Carpentry & Hardware, Common Area	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	3,000.00	0.0231
7373	Keys & Locks	500.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	2,700.00	0.0208
7375	Uniforms													0.00	-
7385	Pest Control	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	130.00	1,560.00	0.0120
7395	Signage	250.00	0.00	250.00	0.00	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	1,000.00	0.0077
	Total Repair & Maintenance	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	SECURITY & ALARMS														
7380	Security Contract	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
7381	Alarm Systems, R&M	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	6,000.00	0.0462
7383	Alarm Systems, Contract	564.50	0.00	1,050.00	564.50	0.00	1,050.00	554.50	0.00	1,102.50	564.50	0.00	1,102.50	[illegible]	0.0505
7384	Life Safety	300.00	300.00	300.00	300.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	[illegible]	[illegible]
	Total Security & Alarms	1,364.50	800.00	1,850.00	1,364.50	750.00	1,800.00	1,314.50	750.00	1,852.50	1,314.50	750.00	1,852.50	[illegible]	[illegible]

2011 DRAFT BUDGET
BUILDING 1400 and COMPLEX
OPERATING EXPENSES

Acct #	Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	RSF
	ADMINISTRATIVE														
7405	Telephone													0.00	-
7410	Office Supplies													0.00	-
7415	G & A, Mail Service													0.00	-
7417	Accounting	875.00	875.00	875.00	875.00	875.00	875.00	875.00	875.00	875.00	875.00	875.00	875.00	[illegible]	[illegible]
7420	Computer Services	202.76	202.76	202.76	202.76	202.76	202.76	202.76	202.76	202.76	202.76	202.76	202.76	2,433.12	0.0187
7430	Auto & Travel													0.00	-
7435	Dues & Subscriptions													0.00	-
7440	Insurance	1,279.92	1,279.92	1,279.92	1,279.92	1,279.92	1,279.92	1,279.92	1,279.92	1,471.91	1,471.91	1,471.91	1,471.91	16,127.00	0.1241
7445	Management Fee	[illegible]	[illegible]	11,833.63	[illegible]	10,798.55	11,851.86	13,744.25	14,437.33	14,480.55	14,840.55	14,848.54	14,393.48	152,783.02	1.1759
7461	Other Fees, Equipment													0.00	-
7490	Other													0.00	-
7491	Training													0.00	-
	Total General & Administrative	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	GROUNDS CARE														
7520	Landscaping - Exterior													0.00	-
7521	Landscaping - Interior	170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	[illegible]	2,477.78	0.0191
7530	Landscaping - Supplies													0.00	-
		170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	170.76	[illegible]	2,477.78	0.0191
	SNOW REMOVAL														
7610	Snow Removal													0.00	-
7620	Snow Removal Supplies													0.00	-
	Total Snow Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
	TOTAL RECOVERABLE - OPERATING	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TAXES														
7810	Real Estate Taxes	51,003.52	51,003.52	51,003.52	51,003.52	51,003.52	51,003.52	51,003.52	51,003.52	51,003.52	87,123.79	52,033.58	52,033.58	621,227.00	4.7814
7820	Other Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
	Total Taxes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.7814

2011 DRAFT BUDGET
BUILDING 1400 and COMPLEX
OPERATING EXPENSES

COMPLEX (4900)

Escalatable Sq. Ft. 882,547

RECOVERABLE OPERATING EXPENSES - COMPLEX

Acct. #	Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
	RECOVERABLE OPERATING EXPENSES													
	PAYROLL EXPENSE													
7010	Salaries, Mgmt & Admin	23,017.50	23,017.00	28,771.00	23,017.00	23,017.00	28,771.00	23,016.00	23,016.00	28,770.00	23,016.00	23,015.00	28,773.00	299,216.00
7015	Salaries, Mgmt & Admin Temporary	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7020	Salaries, Maintenance ST	28,815.00	28,815.00	35,043.00	28,815.00	28,815.00	35,043.00	28,815.00	28,815.00	35,043.00	28,815.00	28,815.00	41,471.00	373,520.00
7030	Salaries, Maintenance OT	5,000.00	5,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	70,000.00
7040	Group Insurance	6,689.00	6,689.00	6,689.00	6,689.00	6,689.00	6,689.00	7,359.00	7,359.00	7,359.00	7,359.00	7,359.00	7,359.00	84,288.00
7050	Worker's Compensation	2,400.00	2,400.00	2,999.00	2,400.00	2,400.00	2,999.00	2,400.00	2,400.00	2,999.00	2,400.00	2,400.00	3,580.00	27,582.00
7060	Payroll Taxes	3,727.00	3,727.00	4,770.00	3,727.00	3,727.00	4,660.00	3,727.00	3,727.00	4,660.00	3,727.00	3,727.00	5,150.00	54,069.00
7062	Pension Plan Contribution	975.00	975.00	1,218.00	975.00	975.00	1,218.00	975.00	975.00	1,218.00	975.00	975.00	1,218.00	12,672.00
		70,433.00	70,433.00	86,430.00	71,423.00	71,423.00	86,380.00	77,093.00	77,092.00	89,249.00	77,091.00	77,091.00	93,350.00	927,335.00
	JANITORIAL/CLEANING													
7110	Janitorial Contract (common area)	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	17,833.81	[illegible]
7111	Miscellaneous Cleaning	500.00	750.00	0.00	3,000.00	500.00	500.00	750.00	500.00	0.00	3,000.00	750.00	500.00	10,750.00
7112	Janitorial - Tenant Specific													0.00
7113	Carpet Cleaning													0.00
7120	Window Cleaning													0.00
7130	Trash Removal Contract	5,000.00	5,500.00	5,500.00	5,500.00	6,000.00	6,000.00	6,250.00	6,250.00	6,250.00	6,250.00	6,250.00	6,500.00	71,250.00
7152	Recycling	1,500.00	1,500.00	1,500.00	1,500.00	1,700.00	1,700.00	1,700.00	1,700.00	1,700.00	1,700.00	1,700.00	1,000.00	[illegible]
7140	Cleaning/Bathroom Supplies	5,000.00	5,500.00	6,000.00	6,000.00	6,600.00	6,000.00	6,000.00	6,000.00	5,500.00	6,500.00	6,500.00	5,500.00	[illegible]
	Total Janitorial/Cleaning	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	UTILITIES													
7220	Electricity - Building													0.00
7221	Electricity - Complex	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	11,124.00
7228	Gas													0.00
7240	Water & Sewer													0.00
	Total Utilities	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	927.00	11,124.00
	REPAIRS & MAINTENANCE													
7310	HVAC Contract	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7315	HVAC Repairs & Maintenance													0.00
7320	Plumbing Repairs & Supplies	1,575.00	1,575.00	1,575.00	1,575.00	1,575.00	1,575.00	1,575.00	1,575.00	1,575.00	7,575.00	1,575.00	1,575.00	24,900.00
7325	Electrical Repairs & Supplies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7327	Generator Repairs													0.00
7330	Lamps & Ballasts, Site	100.00	100.00	3,000.00	100.00	100.00	100.00	100.00	100.00	3,000.00	100.00	100.00	100.00	7,000.00
7331	Lamps & Ballasts, Common Area													0.00
7335	Common Area/General Repairs	2,000.00	2,500.00	4,400.00	2,000.00	2,500.00	2,000.00	2,000.00	2,500.00	4,400.00	2,000.00	2,000.00	2,000.00	30,300.00
7340	Roof Repairs													0.00
7345	Fees & Licenses	5,000.00	1,250.00	950.00	750.00	0.00	0.00	500.00	0.00	500.00	0.00	500.00	0.00	[illegible]
7350	Maintenance Equipment	600.00	600.00	660.00	600.00	600.00	600.00	600.00	600.00	600.00	4,500.00	600.00	600.00	11,300.00
7352	Elevator Service Contract													0.00
7353	Elevator Services													0.00
7354	Elevator, Telephone													0.00
7355	Glass Replacement													0.00
7360	Painting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7370	Carpentry & Hardware, Site	100.00	2,300.00	300.00	100.00	300.00	300.00	100.00	300.00	300.00	300.00	300.00	300.00	5,000.00
7371	Carpentry & Hardware, Common Area													0.00
7373	Keys & Locks													0.00
7375	Uniforms	1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,600.00	0.00	0.00	6,400.00
7385	Pest Control													0.00
7395	Signage	3,000.00	0.00	0.00	0.00	3,000.00	0.00	0.00	3,000.00	0.00	0.00	3,000.00	0.00	12,000.00
	Total Repair & Maintenance	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	SECURITY & ALARMS													
7380	Security Contract	34,933.17	34,933.17	34,933.17	38,433.17	34,933.17	34,933.17	35,433.17	34,933.17	34,933.17	34,935.17	34,933.17	37,433.17	422,598.04
7381	Alarm Systems, R&M	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	6,000.00
7383	Alarm Systems, Contract	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7384	Life Safety													0.00
	Total Security & Alarms	35,433.17	35,433.17	35,433.17	38,933.17	35,433.17	35,433.17	35,933.17	35,433.17	35,433.17	35,435.17	35,433.17	37,933.17	[illegible]

2011 DRAFT BUDGET
BUILDING 1400 and COMPLEX
OPERATING EXPENSES

Acct. #	Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
	ADMINISTRATIVE													
7405	Telephone	2,050.00	2,350.00	2,385.00	2,350.00	2,350.00	2,350.00	2,350.00	2,350.00	2,550.00	2,350.00	2,350.00	2,350.00	28,600.00
7410	Office Supplies	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00	19,200.00
7415	O & A. Mail Service	400.00	400.00	450.00	400.00	400.00	450.00	400.00	400.00	400.00	400.00	400.00	450.00	4,950.00
7417	Accounting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7425	Computer Services	8,500.00	1,300.00	850.00	1,300.00	4,150.00	1,300.00	850.00	1,300.00	850.00	850.00	1,300.00	850.00	23,400.00
7430	Auto & Travel	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	450.00	[illegible]
7435	Dues & Subscriptions	3,000.00	500.00	0.00	550.00	0.00	0.00	550.00	0.00	500.00	3,500.00	0.00	550.00	9,150.00
7440	Insurance	519.42	519.42	519.42	519.42	519.42	519.42	519.42	519.42	546.18	546.18	546.18	546.18	[illegible]
7460	Management Fee													0.00
7461	Other Fees, Equipment	1,500.00	1,500.00	2,000.00	1,000.00	1,500.00	2,500.00	1,500.00	1,500.00	2,000.00	1,500.00	1,500.00	2,000.00	21,000.00
7480	Other	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	3,000.00
7491	Training	2,000.00	2,000.00	0.00	0.00	2,000.00	0.00	0.00	2,000.00	0.00	0.00	2,000.00	0.00	10,000.00
	Total General & Administrative	[illegible]	[illegible]	[illegible]	[illegible]	12,269.42	8,219.42	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	GROUNDS CARE													
7520	Landscaping - Exterior	0.00	0.00	0.00	6,450.00	3,047.00	1,024.00	2,524.00	2,524.00	612.00	2,300.00	0.00	0.00	[illegible]
7521	Landscaping - Interior													0.00
7550	Landscaping - Supplies	0.00	0.00	0.00	0.00	6,500.00	1,500.00	6,500.00	1,500.00	6,500.00	0.00	0.00	0.00	22,500.00
		0.00	0.00	0.00	6,450.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2,300.00	0.00	0.00	[illegible]
	SNOW REMOVAL													
7810	Snow Removal	25,000.00	25,000.00	20,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10,000.00	20,000.00	100,000.00
7820	Snow Removal Supplies	10,000.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5,000.00	5,000.00	25,000.00
	Total Snow Removal	35,000.00	30,000.00	20,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15,000.00	25,000.00	125,000.00
	TOTAL RECOVERABLE - OPERATING	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TAXES													
7810	Real Estate Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7820	Other Taxes	0.00	0.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	500.00	0.00	0.00	1,000.00
	Total Taxes	0.00	0.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	500.00	0.00	0.00	1,000.00

FIRST AMENDMENT OF LEASE

THIS FIRST AMENDMENT OF LEASE (the "First Amendment") is made effective as of this December 21, 2011 by and between **RB KENDALL FEE, LLC** ("Landlord") and **CATABASIS PHARMACEUTICALS, INC.** having a mailing address at One Kendall Square, Building 1400, Suite B14202, Cambridge, Massachusetts 02139 ("Tenant").

BACKGROUND:

A. Reference is made to a certain Lease Agreement dated December 17, 2010, by and between Landlord and Tenant (the "Lease"), demising approximately 9,739 rentable square feet of space on a portion of the second (2nd) floor of Building 1400 (the "Existing Premises") in One Kendall Square, Cambridge, Massachusetts (the "Complex"). Capitalized terms used but not defined herein shall have the same meaning as in the Lease.

B. Landlord and Tenant are the current holders, respectively, of the lessor's and lessee's interests in the Lease.

C. Landlord and Tenant desire to expand the Leased Premises to include additional space within Building 1400 in the Complex , extend the term of the Lease, correct the square footage of the Existing Premises and to further to amend the Lease, all as set forth herein.

AGREEMENTS:

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant hereby agree and amend the Lease as follows:

1. Recalculation: Landlord and Tenant acknowledge and agree that 33 rentable square feet of floor area was added to the Existing Premises during construction of same. From and after the Expansion Premises Effective Date (as hereinafter defined), the Lease shall be amended to provide that the Total Rentable Area of the Existing Premises is 9,772 and the Tenant's Proportionate Common Share and Building Share shall be adjusted to reflect such change in square footage.

2. Extension. Effective as of the Expansion Premises Effective Date, as hereinafter defined, the term of the Lease with respect to the Existing Premises is extended until June 30, 2017, upon all of the same terms and conditions of the Lease in effect as of the date hereof except as otherwise set forth herein.

3. Expansion Premises.

(a) Effective as of the Expansion Premises Effective Date (defined below), approximately 5,045 rentable square feet of space on the second (2nd) floor of Building 1400 identified on the plan attached hereto as Exhibit 1 as the Expansion Premises (the "Expansion Premises") shall be deemed added to and incorporated into the Premises. The Expansion Premises Effective Date shall be the date upon which Landlord delivers the Expansion Premises to Tenant with Landlord's Work (as hereinafter defined) Substantially Complete (as such term is hereinafter defined). From and after the Expansion Premises Effective Date, all references to the Premises in the Lease shall include the Existing Premises and the Expansion Premises and all references to Exhibit A in the Lease shall be deemed to include and refer to Exhibit 1 as well, as applicable. The Expansion Premises shall be delivered in broom clean condition, free of all occupants, personal property, trade fixtures and equipment, and, shall be accepted by

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Tenant in "as-is", "where-is" condition without any warranty of fitness for use or occupancy, expressed or implied, except as otherwise expressly set forth herein. Tenant agrees that Landlord has no work to perform in or on the Expansion Premises to prepare same for Tenant's use and occupancy except for the Landlord's Work set forth below.

(b) The "Expansion Premises Rent Commencement Date" shall be the date that is ninety (90) days following the Expansion Premises Effective Date and the Expansion Premises Effective Date is targeted to be April 6, 2012 (the "Target Completion Date"). Prior to the Expansion Premises Rent Commencement Date Tenant shall continue to pay Yearly Rent, and or other amounts payable under the Lease for the Existing Premises in the amounts provided for in the Lease. If the Expansion Premises Rent Commencement Date shall not have occurred on or before June 5, 2012 (and such failure was not due to any act or omission of Tenant or its employees, agents or contractors which reasonably inhibits the Landlord from timely completing the Landlord's Work, including, without limitation, any change orders requested by Tenant) then the Expansion Premises Rent Commencement Date shall be extended day for day by the number of days beyond the applicable June 6, 2012 that Landlord's Work is not Substantially Complete.

(c) The term of the Lease with regard to the Expansion Premises shall commence on the Expansion Premises Effective Date and thereafter shall be co-terminus with the term of the Lease, expiring on June 30, 2017, unless otherwise terminated pursuant to the terms and conditions of the Lease.

4. Yearly Rent. (a) Commencing on the Expansion Premises Rent Commencement Date, the Yearly Rent due under the Lease for the Expansion Premises shall be as follows:

Period	Yearly Rent	Monthly Rent	Rent Per Rentable Square Foot
Expansion Premises Rent Commencement Date —June 30, 2012 *	$ 232,070.00	$ 19,339.17	$ 46.00
July 1, 2012* — June 30, 2013	$ 237,115.00	$ 19,759.58	$ 47.00
July 1, 2013 — June 30, 2014	$ 242,160.00	$ 20,180.00	$ 48.00
July 1, 2014 — June 30, 2015	$ 247,205.00	$ 20,600.42	$ 49.00
July 1, 2015 — June 30, 2016	$ 252,250.00	$ 21,020.83	$ 50.00
July 1, 2016 — June 30, 2017	$ 257,295.00	$ 21,441.25	$ 51.00

*As such dates may be adjusted based upon the actual Expansion Premises Rent Commencement Date.

(b) Commencing as of July 1 2011, the Yearly Rent due under the Lease for the Existing Premises shall be as follows:

Period	Yearly Rent	Monthly Rent	Rent Per Rentable Square Foot
July 1, 2011 —June 30, 2012	$ 472,378.48	$ 35,614.87	$ 48.34
July 1, 2012 — June 30, 2013	$ 482,150.48	$ 40,179.21	$ 49.34
July 1, 2013 — June 30, 2014	$ 491,922.48	$ 40,993.54	$ 50.34
July 1, 2014 — June 30, 2015	$ 501,694.48	$ 41,807.87	$ 51.34
July 1, 2015 — June 30, 2016	$ 511,466.48	$ 42,622.21	$ 52.34
July 1, 2016 — June 30, 2017	498,372.00	$ 41,531.00	$ 51.00

The Yearly Rent for the Existing Premises set forth above includes the amortized payment of a portion of the excess cost of the Tenant's Improvements as set forth in Section 4.1(j) of the Lease. The Yearly Rent for the entire Premises, including the Expansion Premises, shall be payable in accordance with the terms of the Lease and shall be in addition to all other amounts due and payable by Tenant pursuant to the Lease.

5. Proportionate Shares. Commencing on the Expansion Premises Effective Date, Tenant's Proportionate Building Share shall be increased to 11.47% and Tenant's Proportionate Common Area Share shall be increased to 2.32%. In addition to the Yearly Rent, and other amounts payable under the Lease, Tenant shall be obligated to pay, when billed by Landlord, for its electricity and gas usage in the Premises, including the Expansion Premises, and for pro rate share of water usage.

6. Tenant Improvement Balance. Tenant acknowledges and agrees that, in addition to the amortized payment of a portion of the excess cost of the Tenant's Improvement which are reflected in the rent schedule in paragraph 4(b) above, Tenant owes Landlord an additional $74,698.13 (the "Overage Amount")

toward the excess cost of the Tenant's Improvements. Landlord has agreed to allow Tenant to utilize a portion of the Expansion Allowance (as defined herein), to pay the Overage Amount and such payment shall be made simultaneously with the execution and delivery of this First Amendment.

7. Landlord's Work. Landlord and Tenant have mutually agreed to the fit up plan attached hereto as Exhibit 2 (the "Fit Up Plan") which sets forth the leasehold improvements to the Expansion Premises (the "Landlord's Work"). Any and all substantive deviations from the Fit Up Plan must be memorialized in change orders mutually agreed upon and executed by Landlord and Tenant. Following the execution of this First Amendment, Landlord agrees to use commercially reasonable efforts to obtain good faith, arm's length "not to exceed" estimates of the cost of completing the Landlord's Work according to the Fit Up Plan from three (3) separate, qualified contractors. Thereafter, Landlord and Tenant agree to work together in good faith, using these estimates, to agree upon an overall cost estimate for Landlord's Work (the "Work Estimate"), which shall be signed by Landlord and Tenant and appended to this First Amendment as Exhibit 3. Landlord shall use commercially reasonable speed and diligence to complete the Landlord's Work by the Target Completion Date and at a cost that is less than or equal to the Work Estimate (assuming there are no approved changes orders impacting that cost); *provided, however*, in no event shall the Landlord incur expenses in connection with the Landlord's Work

that, in the aggregate, are 10% or more in excess of the Work Estimate without first obtaining Tenant's prior written consent. In the event Tenant seeks changes to the scope of Landlord's Work and/or the Fit Up Plan after the submission by Landlord to the three (3) contractors for estimates, and there is any delay in the Substantial Completion of the Landlord's Work by Landlord due to such requested changes, then the Landlord's Work shall be deemed Substantially Complete, for purposes of determining the Expansion Premises Commencement Date, on the date Landlord's Work would have been Substantially Complete, if not for Tenant's requested changes, as reasonably determined by Landlord (it being agreed that Landlord shall remain obligated to actually Substantially Complete the Landlord's Work despite such delay). For purposes of this First Amendment, the terms "Substantially Complete" and "Substantial Completion" shall mean the date the Landlord's Work has been substantially completed in accordance with the final Fit Up Plan (subject to the completion of any Punchlist items) as certified in writing by Landlord's architect. Landlord shall complete the Landlord's Work, at its sole cost and expense up to the Expansion Allowance as defined below; provided that any changes orders requested by Tenant will be paid for by Tenant. Landlord shall pay the costs and expenses incurred by Landlord in connection with the performance and completion of Landlord's Work up to a maximum amount not to exceed $807,200.00 ($160.00 per rentable square foot of the Expansion Premises) (the "Expansion Allowance") (less the Overage Amount paid in accordance with paragraph 6 above). Tenant shall be responsible for and promptly (but in no event longer than ten (10) business days after request therefore) pay directly or pay to Landlord for, as appropriate, and indemnify and reimburse Landlord from and against, any actual costs of Landlord's Work that are in excess of the Expansion Allowance. Landlord shall have the same rights and remedies which Landlord has upon the nonpayment of Yearly Rent and other charges due under the Lease for nonpayment of any amounts which Tenant is required to pay to Landlord in excess of the Expansion Allowance and are incurred in compliance with this Section 7. In the event the actual cost of Landlord's Work is less than the total Expansion Allowance, Landlord agrees that Tenant may utilize any remaining Expansion Allowance as follows: (a) to pay down the amount being amortized in the Existing Premises Yearly Rent in accordance with Section 4.1(j) of the Lease (in which event the Yearly Rent for the Existing Premises shall be adjusted accordingly) and (b) to pay for future Tenant improvements in the Premises provided such improvements are completed and reimbursement is sought no later than the date that is twenty-four (24) months prior to the expiration of the term of the Lease or, if Tenant has exercised its option to extend under Section 29.15 of the Lease, the date that is no later than twenty-four (24) months prior to the expiration of such extended term. In the case of use of the excess Expansion Allowance for the purposes contained in (b) above, Landlord shall pay such excess to Tenant following Tenant's completion of Tenant's improvements and Landlord's receipt of all of the following: (a) a reasonably detailed statement, including requisitions from Tenant's general contractor, third party invoices and other documentation reasonably requested by Landlord evidencing the total cost of, and payment for, actual work done which has been approved by Landlord to the extent required under the Lease (and Landlord shall have the right, upon reasonable advance notice to Tenant, to inspect Tenant's books and records relating to such statement in order to verify the amount thereof); (b) all lien waivers relating to items, services and work performed in connection with all phases or portions of Tenant's improvements; (c) reasonable evidence that Tenant's improvements have been completed in accordance with all applicable laws, rules, regulations and ordinances. Notwithstanding anything to the contrary contained herein: (i) Landlord's obligation to pay any unpaid balance of the Expansion Allowance to Tenant shall be conditioned upon there existing no default by Tenant in its obligations under the Lease beyond applicable notice and cure periods at the time that Landlord would be required to make such payment and that any improvements completed by Tenant have been completed in accordance with the terms of the Lease and (ii) Landlord shall have no obligation to advance any funds or pay any amounts in excess of the Expansion Allowance. Upon the written request of Tenant, such request to be given no later than thirty (30) days after Landlord's Work is Substantially Complete, Landlord shall (at no cost to Landlord) make its books and records in connection with Landlord's Work available to Tenant (or its designee) for audit to determine compliance with this Section 7. The individual conducting any such

audit shall be subject to Landlord's reasonable approval.

8. Parking. Upon the Expansion Premises Effective Date and through the term of the Lease, Tenant shall be entitled to a total of five (5) additional monthly parking passes available to Tenant for use in the Garage pursuant to, and in accordance with, Article 29.14 of the Lease.

9. Brokers. Landlord and Tenant each warrant and represent to the other that they have dealt with no brokers in connection with the negotiation or consummation of this First Amendment other than CB Richard Ellis/New England and FHO Partners (collectively, the "Broker") and in the event of any brokerage claim against either party by any person claiming to have dealt with either Landlord or Tenant in connection with this First Amendment, other than the Broker, the party with whom such person claims to have dealt shall defend and indemnify the other party against such claim. Landlord shall pay any commission due the Broker pursuant to a separate agreement.

10. Ratification. In all other respects the Lease shall remain unmodified and shall continue in full force and effect, as amended hereby. Landlord and Tenant hereby ratify, confirm, and reaffirm all of the terms and conditions of the Lease, as amended hereby.

IN WITNESS WHEREOF the parties hereto have executed this First Amendment of Lease on the date first written above in multiple copies, each to be considered an original hereof, as a sealed instrument.

LANDLORD: **TENANT:**

RB KENDALL FEE, LLC

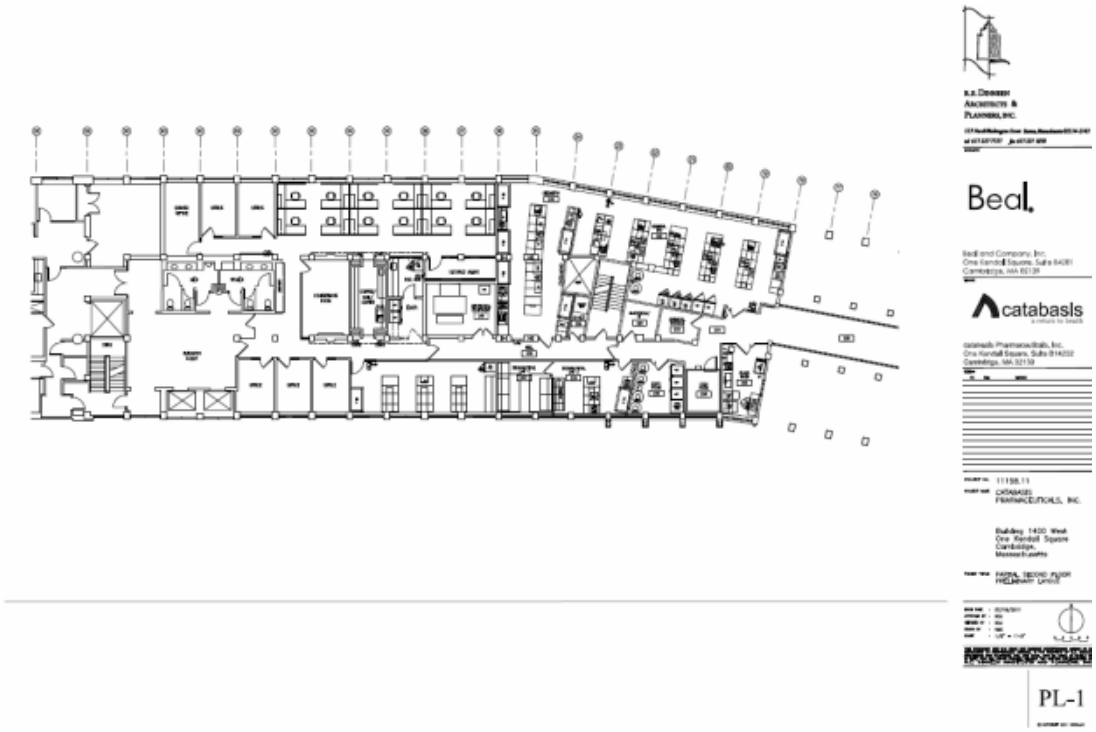
By: /s/ Robert L. Beal
Robert L. Beal, its authorized signatory

CATABAIS PHARMACEUTICALS, INC.

By: /s/ Jill C. Milne
Name: Jill C. Milne
Title: CEO

EXHIBIT -1, FIRST AMENDMENT
LEASE PLAN FOR EXPANSION PREMISES

EXHIBIT -2, FIRST AMENDMENT
LANDLORD'S WORK



Beal.

Property Management
Beal and Company, Inc.
One Kendall Square, Building 400, 2nd Floor
Cambridge, MA 02139
617 252-3335 Fax 617 252-3338

Mailing Address:
One Kendall Square, Suite B4201
Cambridge, MA 02139-01659

April 18, 2012

Christopher Thomajan
Catabasis Pharmaceuticals, Inc.
One Kendall Square, Suite B14202
Cambridge, Massachusetts 02109

Re: Catabasis Pharmaceuticals, Inc. — One Kendall Square

Dear Chris:

With respect to your email dated February 27, 2012 regarding the mistake in the Existing Premises rent table on Page 3 of the First Amendment of Lease dated December 21, 2011, we agree that the Monthly Rent column should read $39,364.87 instead of $35,614.87.

If you are in agreement, please countersign the below to acknowledge Catabasis' agreement to the above correction and send it back to me for our lease files.

Thank you and please do not hesitate to contact me with any questions.

Sincerely,

/s/ Erin S. Orpik
Erin S. Orpik
Senior Property Manger

ESO:dc

cc: Deborah Howitt Easton, Esquire
Jenna Doherty, Assistant Property Manager
Deliris Colon, Lease Administrator

CATABASIS PHARMACEUTICALS, INC.

By: /s/ Chris Thomajan
Name: Chris Thomajan
Title: 23-APR-2012