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As Filed Pursuant to Rule 424(b)(5)
Registration No. 333-212382

PROSPECTUS SUPPLEMENT
(To Prospectus Dated July 19, 2016)

CATABASIS PHARMACEUTICALS, INC.

Up to $10,000,000

Common Stock

We have entered into a sales agreement with Cowen and Company, LLC, or Cowen, dated October 13, 2017, relating to the sale of shares of our common stock, $0.001 par value per share, offered by this prospectus supplement. In accordance with the terms of the sales agreement, under this prospectus supplement we may offer and sell shares of our common stock having an aggregate offering price of up to $10,000,000 from time to time through Cowen, acting as our agent.

The aggregate market value of our outstanding common stock held by non-affiliates as of the date of this prospectus supplement was $54,186,944.40 based on 17,883,480 shares of outstanding common stock held by non-affiliates, and a per share price of $3.03 based on the closing sale price of our common stock on October 4, 2017. Pursuant to General Instruction I.B.6. of Form S-3, in no event will we sell, pursuant to the registration statement of which this prospectus supplement forms a part, securities in a public primary offering with a value exceeding one-third of the aggregate market value of our common stock held by non-affiliates in any 12-month period, so long as the aggregate market value of our outstanding common stock held by non-affiliates remains below $75 million. During the 12 calendar months prior to and including the date of this prospectus supplement, we have offered or sold an aggregate of $7,121,708.52 of our common stock pursuant to General Instruction I.B.6. of Form S-3. As a result, we are eligible to offer and sell up to an aggregate of $10,940,606.28 of shares of our common stock pursuant to such instruction.

Our common stock is listed on The NASDAQ Global Market under the symbol "CATB." The last reported sale price of our common stock on October 12, 2017 was $2.47 per share.

Sales of our common stock, if any, under this prospectus supplement will be made by any method permitted that is deemed an "at the market offering" as defined in Rule 415 under the Securities Act of 1933, as amended, or the Securities Act, including sales made directly on or through the NASDAQ Global Market or on any other existing trading market for our common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, and/or any other method permitted by law. Cowen is not required to sell any specific amount, but will act as our sales agent using commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Stock Market, LLC. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

Cowen will be entitled to compensation at a commission rate equal to 3.0% of the gross sales price per share sold under the sales agreement. See "Plan of Distribution" beginning on page S-24 for additional information regarding the compensation to be paid to Cowen. In connection with the sale of the common stock on our behalf, Cowen will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Cowen will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Cowen with respect to certain liabilities, including liabilities under the Securities Act.

Investing in these securities involves risks. See "Risk Factors" on page S-16 of this prospectus supplement and in the documents incorporated by reference in this prospectus supplement for a discussion of the factors you should carefully consider before deciding to purchase our common stock.

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

Cowen

The date of this prospectus supplement is October 13, 2017.

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Prospectus Supplement

Prospectus

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus supplement, we are referring to both parts of this document combined. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under "Where You Can Find More Information" on page S-2 of this prospectus supplement. These documents contain information you should consider when making your investment decision. This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference therein filed prior to the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document filed after the date of this prospectus supplement and incorporated by reference in this prospectus supplement and the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectuses we may provide to you in connection with this offering. We have not, and Cowen has not, authorized any other person to provide you with any information that is different. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement outside the United States. This prospectus supplement does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Unless the context otherwise indicates, references in this prospectus to "we," "our" and "us" refer, collectively, to Catabasis Pharmaceuticals, Inc., a Delaware corporation, and its consolidated subsidiary.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission, or SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at www.catabasis.com. Our website is not a part of this prospectus supplement and is not incorporated by reference in this prospectus supplement. You may also read and copy any document we file at the SEC's Public Reference Room, 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

This prospectus supplement is part of a registration statement we filed with the SEC. This prospectus supplement omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and our consolidated subsidiary and the securities we are offering. Statements in this prospectus supplement concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus supplement and the accompanying prospectus is considered to be part of this prospectus supplement and the accompanying prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus supplement and the accompanying prospectus are continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus supplement and the accompanying prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus supplement, the accompanying prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus supplement and the accompanying prospectus incorporate by reference the documents listed below (File No. 001-37467) and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, (in each case, other than those documents or the portions of those documents not deemed to be filed) following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed:

- our Annual Report on Form 10-K for the year ended December 31, 2016;
- our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2017 and June 30, 2017;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 from our definitive proxy statement on Schedule 14A filed with the SEC on April 26, 2017;
- our Current Reports on Form 8-K filed with the SEC on January 31, 2017, June 12, 2017, June 19, 2017 and October 4, 2017; and
- the description of our common stock contained in our Registration Statement on Form 8-A filed on June 23, 2015, including any amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

Catabasis Pharmaceuticals, Inc.
One Kendall Square
Building 1400E, Suite B14202
Cambridge, MA 02139
Attn: Investor Relations
(617) 349-1971

FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein include "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. These statements are based on expectations, estimates, forecasts and projections about the industry in which we operate and the beliefs and assumptions of our management. The words "anticipate," "believe," "goals," "seek," "estimate," "expect," "hypothesize," "intend," "may," "might," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein include, among other things, statements about:

- our plans to initiate a single global Phase 3 trial of edasalonexent in Duchenne muscular dystrophy in the first half of 2018, report top-line results from the trial in 2020 and continue to evaluate data from the open-label extension of our MoveDMD® clinical trial of edasalonexent;
- our plans to initiate a Phase 1 clinical trial for CAT-5571 in 2018 and report top-line results from that trial in 2019;
- our plans to identify, develop and commercialize novel therapeutics based on our SMART Linker[SM] drug discovery platform;
- ongoing and planned clinical trials for edasalonexent and other 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 any future 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.

You are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are referenced in the section of this prospectus supplement entitled "Risk Factors" and in the other documents we file from time to time with the SEC, specifically our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and

our Current Reports on Form 8-K. Except as required by law, we do not undertake or plan to update or revise any such forward-looking statements to reflect actual results, changes in plans, assumptions, estimates or projections or other circumstances affecting such forward-looking statements occurring after the date of this prospectus supplement, even if such results, changes or circumstances make it clear that any forward-looking information will not be realized. Any public statements or disclosures by us following this prospectus supplement which modify or impact any of the forward-looking statements contained in this prospectus supplement will be deemed to modify or supersede such statements in this prospectus supplement.

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. 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.

PROSPECTUS SUPPLEMENT SUMMARY

About Catabasis Pharmaceuticals, Inc.

This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our common stock. For a more complete understanding of our company and this offering, we encourage you to read and consider carefully the entire prospectus supplement and the accompanying prospectus, including "Risk Factors" beginning on page S-16 of this prospectus supplement, along with our consolidated financial statements and notes to those consolidated financial statements and the other documents incorporated by reference in this prospectus supplement and the accompanying prospectus.

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 linker, or SMART Linker[SM], drug discovery platform. Our SMART Linker drug discovery platform enables us to engineer product candidates that can simultaneously modulate multiple targets in a disease. Our proprietary product candidates impact pathways that are central to diseases where efficacy may be optimized by a multiple target approach. We have applied our SMART Linker drug discovery platform to build an internal pipeline of product candidates for rare diseases, our primary focus, and plan to pursue partnerships to develop additional product candidates.

Our lead product candidate is edasalonexent, formerly known as CAT-1004, an oral small molecule. Based on its mechanism of action, the inhibition of NF-kB, or nuclear factor kappa-light-chain-enhancer of activated B cells, and the data to date from this program, we believe edasalonexent has the potential to be a disease-modifying therapy by slowing disease progression for all patients affected by Duchenne muscular dystrophy, or DMD, regardless of the underlying dystrophin mutation. DMD is an ultimately fatal genetic disorder involving progressive muscle degeneration. The United States Food and Drug Administration, or FDA, has granted orphan drug, fast track and rare pediatric disease designations to edasalonexent for the treatment of DMD. The European Commission, or EC, has granted orphan medicinal product designation to edasalonexent for the treatment of DMD.

We are currently conducting an open-label extension of the MoveDMD® Phase 1/2 trial of edasalonexent in ambulatory boys with DMD, who were enrolled between the ages four and seven, to investigate the safety and efficacy of edasalonexent in DMD. We have reported positive safety, tolerability, pharmacokinetics and biomarker results from the Phase 1 portion of the MoveDMD trial as well as Phase 2 results, and 24 and 36 week open-label extension results. Although the primary endpoint in the Phase 2 portion of the trial, average change from baseline to week 12 in the magnetic resonance imaging, or MRI, T2 composite measure of lower leg muscles for edasalonexent treatment compared to placebo, was not met, the edasalonexent 100 mg/kg/day treatment group in the Phase 2 portion of the trial consistently showed numerical improvements versus placebo in prespecified exploratory endpoints assessing muscle function, although the changes were not statistically significant. In the open-label extension of the trial, we have observed further improvements across multiple prespecified assessments of muscle function and substantial slowing of DMD disease progression following 24 and 36 weeks of treatment with edasalonexent, as well as supportive changes in measures of muscle health. Edasalonexent has been well tolerated with no

safety signals throughout the MoveDMD trial. Based on the consistency of the MoveDMD results and supportive regulatory input from the FDA, we intend to initiate a single global Phase 3 trial of edasalonexent in DMD, regardless of mutation type, in the first half of 2018 with top-line results expected in 2020. We anticipate that the primary and secondary efficacy endpoints in this Phase 3 trial will be assessments of muscle function for which we observed positive results in the MoveDMD trial.

In addition to our work in DMD, we are evaluating other diseases where the inhibition of NF-kB may be beneficial for further therapeutic applications of edasalonexent. There are a number of other rare diseases where NF-kB is believed to play an important role, such as Becker muscular dystrophy, which is a type of muscular dystrophy and is characterized by slowly progressive muscle weakness of the legs and pelvis, and IgA nephropathy, a kidney disease that is believed to result from activation of mucosal immunity, leading to the synthesis of aberrantly glycosylated polymeric immunoglobulin A1, or IgA1, which enters the circulation and lodges in a patient's kidneys interfering with their proper function.

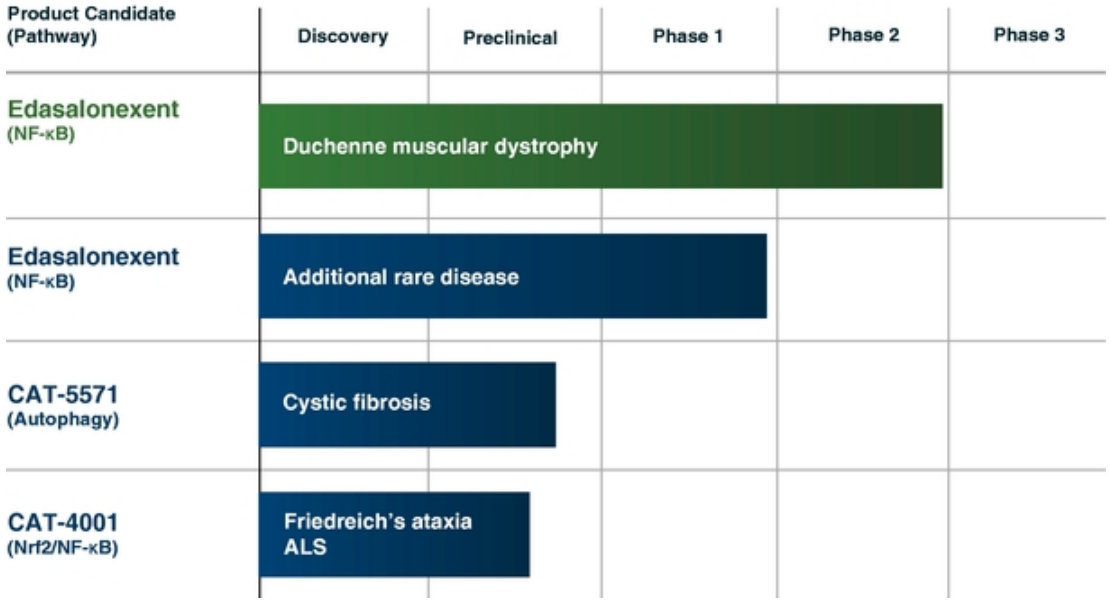
We are also developing a pipeline of product candidates using our SMART Linker drug discovery platform as potential treatments for rare diseases. Our pipeline includes CAT-5571, which we are developing as a potential treatment for cystic fibrosis, or CF, and CAT-4001, which we are developing as a potential treatment for neurodegenerative diseases such as amyotrophic lateral sclerosis, or ALS, and Friedreich's ataxia, or FA. CAT-5571 is a small molecule that activates autophagy, a process that maintains cellular homeostasis and host defense mechanisms, which is known to be impaired in CF. We are currently conducting investigational new drug application, or IND, enabling activities for CAT-5571 and expect to initiate a Phase 1 clinical trial in the second half of 2018 and report top-line results from the trial in 2019. CAT-4001 is a small molecule that activates Nuclear factor (erythroid-derived 2)-like 2, or Nrf2, and inhibits NF-kB, two pathways that have been implicated in FA and ALS. We are currently conducting preclinical activities for the development of CAT-4001.

We are pursuing a partner for further development of our CAT-2000 series of product candidates, of which CAT-2003 is our most advanced program. We designed our CAT-2000 series product candidates to inhibit the Sterol Regulatory Element Binding Protein, or SREBP, pathway, which has been shown to be important in the development of steatosis, which is the accumulation of fat and cholesterol in the liver, and ultimately the inflammation and fibrosis of nonalcoholic steatohepatitis, or NASH.

As of September 30, 2017, we owned five issued U.S. patents with composition of matter and method of use claims directed to edasalonexent, two issued U.S. patents with composition of matter claims generically covering CAT-5571, two issued U.S. patents with composition of matter and method of use claims directed to CAT-4001 and four issued U.S. patents with 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 into account potential patent term extensions. In addition, our patent portfolio includes over 50 issued foreign patents, over 10 pending U.S. patent applications and over 35 pending foreign patent applications.

Our Product Candidates

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



Edasalonexent

Edasalonexent is a SMART Linker conjugate of salicylic acid and the omega-3 fatty acid docosahexaenoic acid, or DHA, a naturally occurring unsaturated fatty acid with anti-inflammatory properties. We designed edasalonexent to inhibit NF-kB, a protein that is activated in DMD and that drives inflammation, fibrosis and muscle degeneration, and suppresses muscle regeneration. We reported results from the Phase 1 portion of the MoveDMD trial in January 2016 and top-line safety and efficacy results from the Phase 2 portion of the trial in January 2017. In July 2016, we initiated an open-label extension of the MoveDMD trial, which has provided safety and efficacy data through 24 weeks and 36 weeks of edasalonexent treatment, and we reported efficacy and safety results from the open-label extension in October 2017. Results from the MoveDMD trial are described further below under "—Edasalonexent Clinical Development." The FDA has granted edasalonexent orphan drug, fast track and rare pediatric disease designations for the treatment of DMD. The EC has granted orphan medicinal product designation to edasalonexent for the treatment of DMD.

In September 2016, we announced a pre-clinical joint research collaboration with Sarepta Therapeutics, Inc., or Sarepta, a commercial stage developer of RNA targeted therapeutics, established to explore a combination drug treatment approach for DMD. In the Catabasis and Sarepta collaboration, increased dystrophin protein expression was seen with an exon-skip modality in combination with edasalonexent in the designated mouse model of DMD.

Edasalonexent Clinical Development

MoveDMD Phase 1/2 Trial of Edasalonexent in Patients with DMD

Our MoveDMD trial enrolled ambulatory boys between ages four and seven with a genetically confirmed diagnosis of DMD who were steroid naive or had not used steroids for at least six months prior to the trial. Boys enrolled in the trial were not limited to any specific dystrophin mutations. The MoveDMD trial was designed to be conducted in three sequential parts, a Phase 1 portion and a

placebo-controlled Phase 2 portion, both of which have been completed, and an open-label extension, which was initiated in July 2016 and is on-going.

In the Phase 1 portion of the MoveDMD trial, which was conducted at three sites in the United States, we assessed the safety, tolerability and pharmacokinetics of edasalonexent in 17 patients, following seven days of dosing, across three dosing levels: 33 mg/kg/day, taken in a single daily dose, 67 mg/kg/day, taken in two daily doses, and 100 mg/kg/day, taken in three daily doses. We also compared edasalonexent exposure levels to exposure levels achieved in previous edasalonexent clinical trials in adults where inhibition of NF-kB was observed. In January 2016, we reported that all three doses of edasalonexent tested were generally well tolerated with no safety signals observed. The majority of adverse events, or AEs, were mild, and the most common AEs were gastrointestinal, primarily diarrhea. There were no serious AEs and no drug discontinuations. For the 67 mg/kg/day and 100 mg/kg/day dosing levels, pharmacokinetic results demonstrated edasalonexent plasma exposure levels consistent with those previously observed in adults at which inhibition of NF-kB was observed. We subsequently reported results with positive NF-kB biomarker data that supported NF-kB target engagement via statistically significant reduction in NF-kB controlled gene expression for the 67 mg/kg/day and 100 mg/kg/day dosing levels. These two dosing levels were advanced to the Phase 2 portion of the trial.

In the Phase 2 portion of the trial, we assessed the effects of edasalonexent over a treatment period of 12 weeks in a randomized, double-blind, placebo-controlled trial at five sites in the United States. Thirty-one boys were enrolled in the Phase 2 portion of the MoveDMD trial and all completed the 12-week treatment period. We announced in January 2017 that the primary endpoint of average change from baseline to week 12 in the MRI T2 composite measure of lower leg muscles for the pooled edasalonexent treatment groups compared to placebo was not met. However, we observed that the edasalonexent 100 mg/kg/day treatment group consistently showed numerical improvement versus placebo in prespecified exploratory endpoints assessing muscle function, although the changes were not statistically significant, as well as continued acceptable plasma exposure data in the Phase 2 portion of the trial. In the Phase 2 portion of the trial, there were no safety signals and edasalonexent was well tolerated, with no treatment-related serious AEs, no drug discontinuations and no dose reductions.

Consistent with the top-line muscle function results from the Phase 2 portion of the trial, in an additional prespecified analysis, we also observed numerical improvements in the rates of decline in muscle function during the 12-week Phase 2 treatment period as compared to the period between the commencement of the Phase 1 and Phase 2 portions of the trial, which period averaged 8 months for the boys who were treated in the 12-week Phase 2 treatment period. The slowing rates of decline included reductions in the rates of decline of 50% or more in the 10-meter walk/run and 4-stair climb assessments of muscle function, 45% in the time to stand assessment of muscle function, and a more than 50% slowing in rate of decline in scores for the North Star Ambulatory Assessment, or NSAA, and Pediatric Outcomes Data Collection Instrument, or PODCI, global functional assessment tests, though these changes were generally not statistically significant as the MoveDMD trial was not powered for functional measures.

After the completion of dosing in the Phase 2 potion of the trial, the patients in the placebo group were randomized to the 67 mg/kg/day and 100 mg/kg/day treatment groups in the open-label extension. Following the analysis of the top-line results and the safety and tolerability data observed for edasalonexent in the Phase 2 portion of the trial, all patients on the 67 mg/kg/day dose were transitioned to the higher 100 mg/kg/day dose in the open-label extension. We also extended the open-label extension period to a total of 112 weeks so that we could assess the higher dose over an extended period of treatment. In addition, we amended the open-label extension protocol to explore

the safety and tolerability of the combination of edasalonexent with Sarepta Therapeutics' recently approved EXONDYS 51, an exon-skipping therapy, based on results from a preclinical animal model in which edasalonexent increased dystrophin expression in combination with exon-skipping therapy.

During the open-label extension of the MoveDMD trial, we observed positive results following 24 and 36 weeks of treatment with edasalonexent at 100 mg/kg/day. In the 100 mg/kg/day treatment group, 16 boys commenced edasalonexent treatment at an initial dose of 100 mg/kg/day, either at the beginning of the Phase 2 portion of the trial or, for boys initially on placebo, at the beginning of the open-label extension. We refer to this patient group as the Initial 100 mg/kg Dose Group. We calculated the control period rates of decline based on declines observed in the 12 boys in the Initial 100 mg/kg Dose Group that had participated in the MoveDMD trial prior to commencement of dosing of edasalonexent at 100 mg/kg/day in either the 12-week Phase 2 treatment period or the open-label extension portion of the trial. Data from the other four boys in the Initial 100 mg/kg Dose Group were not included in calculating the control period rates of decline because they had joined the MoveDMD trial at the start of the Phase 2 portion and were initially dosed at 100 mg/kg/day, the result of which was that we did not have pretreatment data for them. We focused our open-label extension rate of decline analysis on the Initial 100 mg/kg Dose Group as all boys were taking the 100 mg/kg dose in the open-label extension at the time of our analysis. The Initial 100 mg/kg Dose Group included boys with diagnoses of DMD across a range of mutation types and the data were analyzed after all boys in the Initial 100 mg/kg Dose Group, including those initially on placebo, reached 24 weeks after starting edasalonexent treatment. At the time of the open-label extension data analysis, all 14 boys continuing to participate in the Initial 100 mg/kg Dose Group had received 100 mg/kg/day for 24 weeks and 11 had completed 36 weeks of 100 mg/kg/day edasalonexent treatment.

Through 24 and 36 weeks of treatment, the boys in the Initial 100 mg/kg Dose Group showed clinically meaningful numerical improvements in rates of decline across all three timed function tests assessed (10-meter walk/run, 4-stair climb and time to stand), as well as the NSAA global assessment of muscle function for the treatment period compared to the control period. For PODCI, an improvement was generally seen though more variability was also observed in this assessment. This measurement is less well suited to open-label assessment, when there is no longer a placebo comparator, as it is a patient/parent-reported outcome.

Our open-label extension data provide evidence that edasalonexent substantially slows the progression of DMD across a range of mutation types, though the results were not statistically significant as the trial was not powered for functional measures. In addition, we observed supportive changes in measures of muscle health, consistent with positive edasalonexent treatment effects. Four muscle enzymes (creatine kinase, alanine aminotransferase, aspartate aminotransferase and lactate dehydrogenase) were significantly lower compared to baseline following 12 weeks of edasalonexent treatment and at later time points, consistent with a slowing of muscle degeneration and an improvement in muscle integrity. A composite of MRI T2 rates of change in five lower leg muscles was also significantly improved following 12 weeks of 100 mg/kg/day edasalonexent treatment for 12 boys, as well as at the last available observation at 24 or 36 weeks of treatment for 10 boys, in each case as compared to the control period described above, consistent with a reduction of inflammation in the muscle.

During the open-label extension, edasalonexent has continued to be well tolerated with no safety signals observed to date. The majority of AEs have been mild in nature with no serious AEs. There have been no dose reductions and no drug-related discontinuations. No additional changes in the rate of gastrointestinal AEs were observed with the transition to 100 mg/kg/day in the open-label extension. The most common AEs have been gastrointestinal, primarily mild and transient diarrhea. Height, weight and body mass index growth patterns have continued to be similar to standard growth

curves for unaffected boys in the age range of the MoveDMD patients. Boys with DMD in this age range typically have resting tachycardia, a heart rate that exceeds the normal resting rate, and heart rates of the boys treated with edasalonexent decreased toward age-normative values during the period of treatment.

We plan to initiate a single global Phase 3 trial of edasalonexent in DMD, regardless of mutation type, in the first half of 2018, to evaluate the efficacy and safety of edasalonexent for registration purposes, with top-line results expected in 2020. The design of our planned Phase 3 trial contains many elements that are similar to our MoveDMD Phase 1/2 clinical trial. Our anticipated design for this randomized, double-blind, placebo-controlled trial has been informed by discussions with the FDA. We anticipate that the trial will enroll approximately 125 patients ages four to seven who have not been on steroids for at least six months. The primary efficacy endpoint is anticipated to be change in the NSAA score after 12 months of treatment with edasalonexent compared to placebo. Key secondary endpoints are expected to include age-appropriate timed function tests. Eligible patients are anticipated to be randomized in a 2:1 ratio to edasalonexent treatment or placebo.

CAT-5571

CAT-5571 is a SMART linker conjugate that contains cysteamine, a naturally occurring molecule that is a degradation product of the amino acid cysteine, and DHA. We are developing CAT-5571 initially as a potential oral treatment for CF, with potential beneficial effects on both the clearance of multiple types of pathogens, including *Pseudomonas aeruginosa*, and trafficking and function of cystic fibrosis transmembrane conductance regulator, or CFTR. CAT-5571 is a small molecule that activates autophagy, a process that maintains cellular homeostasis and host defense mechanisms, which is known to be impaired in CF.

We have shown in preclinical studies that CAT-5571 synergistically activates autophagy in cultured primary human bronchial epithelial cells isolated from patients with CF. In addition, we have also shown that CAT-5571 enhances the clearance of *Pseudomonas aeruginosa* and *Burkholderia cenocepacia* infection in preclinical models of CF, irrespective of CFTR mutation status, suggesting that CAT-5571 could play an important role in improving clinical outcomes in combination with current CF therapies. We also have shown in ex vivo preclinical studies that CAT-5571, in combination with lumacaftor/ivacaftor, an FDA-approved combination drug that consists of lumacaftor, which increases CFTR proteins that are trafficked to the cell surface, and ivacaftor, which increases the activity of the CFTR protein at the surface of epithelial cell, enhances cell-surface trafficking and function of CFTR with the F508del mutation, which is the most frequent CFTR mutation and is present in 86% of patients included in the Cystic Fibrosis Foundation United States Patient Registry. We are currently conducting IND-enabling activities for CAT-5571 and intend to advance CAT-5571 into a Phase 1 clinical trial in the second half of 2018 and report top-line results from the trial in 2019.

Cystic fibrosis is a rare, chronic, genetic, life-shortening orphan disease that affects more than 70,000 patients worldwide, predominantly in the Caucasian population. In CF, a malfunctioning CFTR ion channel impairs chloride secretion, with deleterious effects on multiple organs, and particularly devastating effects on pulmonary, intestinal and pancreatic function. Patients affected with CF are also predisposed to respiratory failure caused by persistent lung infections, notably bacteria and most commonly *Pseudomonas aeruginosa*, that are difficult to treat with standard antibiotics. CF patients have frequent pulmonary exacerbations due to their inability to clear the persistent lung infections. Advancement in research and treatments have extended the life expectancy for those living with CF, however, there is currently no cure.

CAT-4001

CAT-4001 is a SMART linker conjugate that we designed to combine the potentially beneficial activities of monomethyl fumarate and DHA on the Nrf2 and NF-kB pathways. CAT-4001 is a small molecule designed to activate the Nrf2 pathway and inhibit the NF-kB pathway. We are developing CAT-4001 initially for the treatment of severe, rare neurodegenerative diseases, such as FA and ALS, two diseases of the central nervous system in which the Nrf2 and NF-kB pathways have been implicated, irrespective of mutation status. Nrf2 is a gene transcription factor, a protein that works inside of cells to control the expression of genes, that control the body's response to cellular stress and oxidative damage. We are currently conducting preclinical activities for the development of CAT-4001.

We have shown that CAT-4001 modulates the Nrf2 and NF-kB pathways in both cellular assays and animal models. In these pre-clinical studies, we have also observed that the activity produced by CAT-4001 was greater than that produced by the individual bioactives, monomethyl fumarate and DHA, either alone or in combination at approximately equivalent amounts to those contained in the CAT-4001 conjugate. Oxidative stress and neuroinflammation are believed to play a central role in a number of neurodegenerative diseases, including FA and ALS. In addition, monomethyl fumarate is the circulating form of the active ingredient of Biogen's Tecfidera® (dimethyl fumarate), an FDA-approved treatment for multiple sclerosis, another neurodegenerative disease. We believe that this known therapeutic effectiveness of monomethyl fumarate offers further support for the potential for CAT-4001 to be developed for the treatment of neurodegenerative diseases.

Based on its mechanism of action, we believe that CAT-4001 has the potential to be a disease modifying agent in certain neurodegenerative diseases. In 2017, we plan to continue preclinical evaluation of CAT-4001 in animal models of FA as well as ALS.

FA is a rare genetic disease that causes nervous system damage and compromises motor coordination. FA 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 FA causes a reduction in the production of the frataxin protein and iron levels in mitochondria become poorly regulated. In FA, iron overload in mitochondria affects metabolism, causing oxidative stress and ultimately damaging mitochondrial DNA. Progressive degeneration of central and peripheral nervous systems in FA 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.

FA occurs in both males and females and is estimated to affect 1 in 50,000 individuals. Based on this prevalence rate, we believe there are up to 6,000 patients with FA in the US and up to 20,000 FA patients in the European Union. Advancement in research and treatment have extended the life expectancy for those living with FA, however, there is currently no cure.

The Friedreich's Ataxia Research Alliance announced in January 2016 that we were the recipient of the Kyle Bryant Translational Research Award. The Kyle Bryant Translational Research Award specifically focuses on pre-clinical and clinical investigations that target treatments for FA.

ALS, sometimes called Lou Gehrig's disease or classical motor neuron disease, is a rapidly progressive, fatal neurological disease that attacks the nerve cells responsible for controlling voluntary muscles. Eventually, muscle weakness and atrophy occur. 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, over 6,000 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 more than 20,000 Americans may have the disease at any given time. ALS occurs throughout the world and affects all racial, ethnic and socioeconomic groups.

CAT-2000 Series

Our CAT-2000 compounds are SMART linker conjugates of nicotinic acid and EPA. We designed our CAT-2000 series product candidates to inhibit the SREBP pathway, which has been shown to be important in the development of steatosis, which is the accumulation of fat and cholesterol in the liver, and ultimately the inflammation and fibrosis of NASH. The linkers for our CAT-2000 series compounds are cleaved through intracellular enzymatic hydrolysis, to release the component bioactives to inhibit SREBP. SREBP inhibition plays a key role in regulating key aspects of NASH and in suppressing a known human polymorphic variant of the Patatin-Like Phospholipase Domain Containing 3, or PNPLA3, gene expressed in the liver. This variant of the PNPLA3 gene has been associated with the initiation and progression of fibrosis leading to cirrhosis and hepatocellular carcinoma. Patients with the PNPLA3 polymorphism can be identified by single nucleotide polymorphism analysis and are at higher risk for severe disease, which presents a possible opportunity for patient stratification and clinical trial enrichment.

By using different linkers, we have produced product candidates within the CAT-2000 series that possess different hydrolysis rates, resulting in distinct pharmacokinetics, biodistribution and pharmacology. We have been able to demonstrate enzymatic hydrolysis and inhibition of SREBP in *in vitro* studies with CAT-2000 molecules. In addition, *in vivo*, CAT-2000 molecules have demonstrated efficacy in multiple preclinical models of hyperlipidemias and NASH. Our portfolio of CAT-2000 molecules includes the clinical-stage molecule CAT-2003, four conjugates in pre-clinical development, and other discovery-stage molecules with intermediate rates of hydrolysis. We believe that this portfolio of CAT-2000 molecules provides an opportunity to address genetically predisposed NASH patients who overexpress PNPLA3. We intend to pursue a partnership for further development of the CAT-2000 series in NASH.

THE OFFERING

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to $10,000,000.
Common stock to be outstanding after this offering	26,530,317 shares, assuming the sale of 4,048,582 shares of our common stock in this offering at an offering price of $2.47 per share, which was the last reported sale price of our common stock on the NASDAQ Global Market on October 12, 2017. The actual number of shares issued will vary depending on the sales price under this offering.
Manner of offering	"At the market offering" that may be made from time to time through our sales agent, Cowen and Company, LLC. See the section entitled "Plan of Distribution" on page S-24 of this prospectus supplement.
Use of proceeds	We currently estimate that we will use the net proceeds from this offering to fund our ongoing and planned clinical trials of edasalonexent, to fund market development activities for edasalonexent, to fund research and development to advance our pipeline of preclinical product candidates and expand our product platform, and for working capital and other general corporate purposes. See the section entitled "Use of Proceeds" on page S-21 of this prospectus supplement.
Risk factors	See "Risk Factors" beginning on page S-16 of this prospectus supplement, as well as the other information included in or incorporated by reference in this prospectus supplement and the accompanying prospectus, for a discussion of certain factors you should carefully consider before deciding to invest in shares of our common stock.
NASDAQ Global Market symbol	"CATB"

The number of shares of our common stock to be outstanding after this offering is based on 22,481,735 shares of our common stock outstanding as of August 31, 2017.

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

- 2,843,105 shares of our common stock issuable upon the exercise of stock options outstanding as of August 31, 2017, at a weighted-average exercise price of $4.55 per share;
- 826,686 shares of our common stock available for future issuance as of August 31, 2017 under our 2015 stock incentive plan;
- 24,566 shares of our common stock issuable upon the exercise of warrants outstanding as of August 31, 2017, at an exercise price of $12.2114 per share;
- 523,659 shares of our common stock available for future issuance as of August 31, 2017 under our 2015 employee stock purchase plan; and

- 413,298 shares of common stock issued subsequent to August 31, 2017 in connection with our "at the market offering" pursuant to a sales agreement dated August 11, 2016, by and between Cowen and Company LLC and us.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise of the outstanding options or warrants described above.

RISK FACTORS

An investment in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks and uncertainties described below and under the section captioned "Risk Factors" contained in our most recent Annual Report on Form 10-K and other filings we make with the SEC from time to time, which are incorporated by reference herein in their entirety, together with other information in this prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein and in any free writing prospectus that we may authorize for use in connection with this offering. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could suffer materially. In such event, the trading price of our common stock could decline and you might lose all or part of your investment.

Risks Related to Our Financial Position and Need for Additional Capital

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, if and to the extent of certain ongoing activities, particularly if we initiate new clinical trials of our product candidates, such as the Phase 3 clinical trial of edasalonexent in Duchenne muscular dystrophy, or DMD, that we intend to initiate in the first half of 2018, or 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, we have incurred and will continue 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 will be required to expend significant funds in order to advance the development of edasalonexent, as well as our other product candidates. Even if we sell the full amount of common stock that we may offer under this prospectus supplement, we will not have sufficient funding to complete the Phase 3 clinical trial of edasalonexent in DMD that we intend to initiate in the first half of 2018 or the clinical development of edasalonexent. Accordingly, we will need to raise additional funding and such funding may not be available to us on acceptable terms, on a timely basis or at all. In the event that we are unable to obtain such funding on acceptable terms and in a timely manner, we may not be able to complete the clinical development of edasalonexent.

In addition, while we may seek one or more collaborators for future development of our product candidates or programs, such as our CAT-2000 program in nonalcoholic steatohepatitis, or NASH, or for our platform technology, we may not be able to enter into a collaboration for any of our product candidates or programs or for our platform technology on suitable terms or at all. In any event, 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. We do not have any committed external source of funds.

Adequate additional funding may not be available to us on acceptable terms, on a timely basis or at all, impacting our ability to execute on our strategic plans. Further, our ability to obtain additional debt financing may be limited by covenants we have made under our loan and security agreement with MidCap Financial Trust, or MidCap, Flexpoint MCLS SPV LLC, or Flexpoint, and Square 1 Bank, or Square 1, including our negative pledge with respect to intellectual property in favor of Flexpoint and Square 1, as well as our pledge to MidCap, Flexpoint and Square 1 of substantially all of our assets, other than our intellectual property, as collateral. Our failure to raise capital on acceptable terms as and when needed would have a material adverse effect on our business, results of operations, financial condition and ability to pursue our business strategy.

Our current operating plan provides for cash to fund operations through August 2018. Our estimate as to how long we expect our 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. Changes in estimates and assumptions underlying our operating plan could impact our ability to continue as a going concern for a period of one year from the date of issuance of the financial statements contained in the registration statement of which this prospectus supplement is a part. We believe that the impact of these changes would be mitigated by our ability to significantly delay or reduce certain direct program expenditures. 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 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.

Risks Related to the Discovery, Development and Commercialization 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 Food and Drug Administration or comparable foreign regulatory authorities, such as the European Medicines Agency. 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 edasalonexent 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 edasalonexent in a timely and cost-effective manner or at all. Furthermore, we intend to enroll a significantly greater number of patients in our planned Phase 3 clinical trial of edasalonexent in DMD than were enrolled in our previous trials of edasalonexent. As a result, we may be subject to greater risks with respect to patient enrollment.

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, further clinical trials for edasalonexent may require that the enrolled boys be between certain ages and not on certain other medications. These inclusion criteria, or other inclusion criteria that are not yet defined, could further limit the available patient pool and present challenges to clinical trial enrollment.

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.

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 indication of our most advanced program, DMD.

There are currently two therapies approved for the treatment of DMD in the United States, Sarepta Therapeutics' drug EXONDYS 51®, also known as eteplirsen, and PTC Therapeutics' EMFLAZA™, also known as deflazacort, a corticosteroid. EMFLAZA™ was developed by Marathon Pharmaceuticals and acquired by PTC Therapeutics in April 2017. EXONDYS 51 is approved for the treatment of DMD in patients who have a mutation that is amenable to exon 51 skipping. EMFLAZA can be prescribed to any DMD patient greater than 5 years of age, regardless of the underlying mutation. Additionally, corticosteroid therapy, including prednisone, is often prescribed off-label to treat the inflammation underlying DMD and to delay loss of ambulation. PTC Therapeutics' Translarna™ has conditional marketing authorization in the European Union for the treatment of DMD caused by a nonsense mutation. A number of companies are developing additional therapies to treat DMD and are in the process of registration or in late stage clinical development, including PTC Therapeutics, Santhera Pharmaceuticals and Sarepta Therapeutics.

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.

Risks Related to This Offering

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

The shares sold in this offering, if any, will be sold from time to time at various prices. However, the expected offering price of our common stock will be 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. You will experience immediate dilution of $1.30 per share, representing the difference between our as adjusted net tangible book value per share after giving effect to this offering and the assumed offering price of $2.47 per share, the last reported sale price of our common stock on The NASDAQ Global Market on October 12, 2017. To the extent outstanding options are exercised, you will incur further dilution.

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

We have broad discretion over the use of our cash and cash equivalents, including the net proceeds we receive in this offering, and may not use them effectively.

Our management has broad discretion to use our cash and cash equivalents, including the net proceeds we receive in this offering, to fund our operations and could spend these funds 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 have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use to fund operations, we may invest our cash and cash equivalents in a manner that does not produce income or that loses value.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate gross sales proceeds of up to $10,000,000 from time to time (before deducting sales agent commissions and expenses). Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time.

We intend to use the net proceeds from this offering to fund our ongoing and planned clinical trials of edasalonexent, to fund market development activities for edasalonexent, to fund research and development to advance our pipeline of preclinical product candidates and expand our product platform, and for working capital and other general corporate purposes. General corporate purposes may include research and development expenditures, repayment and refinancing of debt, and working capital and capital expenditures. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will retain broad discretion over the allocation of the net proceeds.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain earnings, if any, to finance the growth and development of our business. We do not expect to pay any cash dividends on our common stock in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, restrictions contained in current or future financing instruments, provisions of applicable law and other factors the board deems relevant. In addition, our ability to pay cash dividends on our common stock is prohibited by the covenants of our credit facility with MidCap Financial Trust, Flexpoint MCLS SPV LLC and Square 1 Bank.

DILUTION

If you invest in our common stock, your interest will be diluted to the extent of the difference between the price per share you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value as of June 30, 2017 was approximately $21.6 million, or approximately $0.96 per share of common stock based upon 22,481,735 shares outstanding. Net tangible book value per share is equal to our total tangible assets, less our total liabilities, divided by the total number of shares outstanding as of June 30, 2017.

After giving effect to the sale of our common stock in the aggregate amount of $10,000,000 at an assumed offering price of $2.47 per share, the last reported sale price of our common stock on The NASDAQ Global Market on October 12, 2017, and after deducting commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2017 would have been $30.1 million, or $1.17 per share of common stock. This represents an immediate increase in net tangible book value of $0.21 per share to our existing stockholders and an immediate dilution of $1.30 per share to new investors in this offering. The following table illustrates this calculation on a per share basis. The as adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares sold and other terms of the offering determined at the time shares of our common stock are sold pursuant to this prospectus supplement and accompanying prospectus. The as adjusted information assumes that all of our common stock in the aggregate amount of $10,000,000 is sold at the assumed offering price of $2.47 per share, the last reported sale price of our common stock on The NASDAQ Global Market on October 12, 2017. The shares sold in this offering, if any, will be sold from time to time at various prices.

Assumed offering price per share		$ 2.47
Net tangible book value per share as of June 30, 2017	$ 0.96	
Increase in net tangible book value per share attributable to the offering	$ 0.21	
As adjusted net tangible book value per share after giving effect to the offering		$ 1.17
Dilution per share to new investors participating in the offering		$ 1.30

The number of shares of our common stock to be outstanding immediately after this offering is based on 22,481,735 shares of our common stock outstanding as of June 30, 2017. The number of shares outstanding as of June 30, 2017 excludes:

- 2,801,850 shares of our common stock issuable upon the exercise of stock options outstanding as of June 30, 2017, at a weighted-average exercise price of $4.61 per share;
- 867,941 shares of our common stock available for future issuance as of June 30, 2017 under our 2015 stock incentive plan;
- 24,566 shares of our common stock issuable upon the exercise of warrants outstanding as of June 30, 2017, at an exercise price of $12.2114 per share;
- 523,659 shares of our common stock available for future issuance as of June 30, 2017 under our 2015 employee stock purchase plan; and
- 413,298 shares of common stock issued subsequent to June 30, 2017 in connection with our "at the market offering" pursuant to a sales agreement dated August 11, 2016, by and between Cowen and Company LLC and us.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with Cowen, under which we may offer and sell from time to time up to an aggregate of $10,000,000 of our common stock through Cowen as our sales agent. Sales of our common stock, if any, will be made at market prices by any method that is deemed to be an "at the market offering" as defined in Rule 415 under the Securities Act, including sales made directly on or through The NASDAQ Global Market or on any other existing trading market for our common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, and/or any other method permitted by law. Cowen may also purchase shares of our common stock as principal.

Cowen will offer our common stock subject to the terms and conditions of the sales agreement on a daily basis or as otherwise agreed upon by us and Cowen. We will designate the maximum amount of common stock to be sold through Cowen on a daily basis or otherwise determine such maximum amount together with Cowen. Subject to the terms and conditions of the sales agreement, Cowen will use its commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us. We may instruct Cowen not to sell common stock if the sales cannot be effected at or above the price designated by us in any such instruction. Cowen or we may suspend the offering of our common stock being made through Cowen under the sales agreement upon proper notice to the other party. Cowen and we each have the right, by giving written notice as specified in the sales agreement, to terminate the sales agreement in each party's sole discretion at any time.

The aggregate compensation payable to Cowen as sales agent equals 3.0% of the gross sales price of the shares sold through it pursuant to the sales agreement. We have also agreed to reimburse Cowen in a mutually agreed amount not to exceed $50,000 of Cowen's actual outside legal expenses incurred by Cowen in connection with this offering. We have also agreed to reimburse Cowen for its FINRA counsel fee of up to $15,000. We estimate that the total expenses of the offering payable by us, excluding commissions payable to Cowen under the sales agreement, will be approximately $175,000.

The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory, or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such common stock.

Cowen will provide written confirmation to us following the close of trading on The NASDAQ Global Market on each day in which common stock is sold through it as sales agent under the sales agreement. Each confirmation will include the number of shares of common stock sold through it as sales agent on that day, the volume weighted average price of the shares sold, the percentage of the daily trading volume and the net proceeds to us.

In any quarter in which shares of common stock are sold through Cowen under the sales agreement, we will report the number of shares of common stock sold, the net proceeds to us and the compensation paid by us to Cowen in connection with the sales of common stock.

Settlement for sales of common stock will occur, unless the parties agree otherwise, on the third business day that is also a trading day following the date on which any sales were made in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

In connection with the sales of our common stock on our behalf, Cowen will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation paid to Cowen will be deemed to be underwriting commissions or discounts. We have agreed in the sales agreement to provide indemnification and contribution to Cowen against certain liabilities, including liabilities under the Securities Act. As sales agent, Cowen will not engage in any transactions that stabilize our common stock.

Our common stock is listed on The NASDAQ Global Market and trades under the symbol "CATB." The transfer agent of our common stock is American Stock Transfer & Trust Company, LLC.

Cowen and its affiliates have provided, and may in the future provide, various investment banking and other financial services for us for which services they have received and, may in the future receive, customary fees.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP, Boston, Massachusetts. Cowen is being represented in connection with this offering by Cooley LLP, New York, New York.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2016, as set forth in their report, which is incorporated by reference in this prospectus supplement and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

PROSPECTUS

$100,000,000.00

CATABASIS PHARMACEUTICALS, INC.

Common Stock

Preferred Stock

Depositary Shares

Units

Warrants

We may offer and sell securities from time to time in one or more offerings of up to $100,000,000 in aggregate offering price. This prospectus describes the general terms of these securities and the general manner in which these securities will be offered. We will provide the specific terms of these securities in supplements to this prospectus. The prospectus supplements will also describe the specific manner in which these securities will be offered and may also supplement, update or amend information contained in this document. You should read this prospectus and any applicable prospectus supplement before you invest.

We may offer these securities in amounts, at prices and on terms determined at the time of offering. The securities may be sold directly to you, through agents, or through underwriters and dealers. If agents, underwriters or dealers are used to sell the securities, we will name them and describe their compensation in a prospectus supplement.

Our common stock is listed on The NASDAQ Global Market under the symbol "CATB."

As of June 6, 2016, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $54.2 million, which was calculated based on 7,616,200 shares of outstanding common stock held by non-affiliates and a price per share of $7.12. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell, pursuant to the registration statement of which this prospectus forms a part, securities in a public primary offering with a value exceeding one-third of the aggregate market value of our common stock held by non-affiliates in any 12-month period, so long as the aggregate market value of our outstanding common stock held by non-affiliates remains below $75 million. During the 12 calendar months prior to and including the date of this prospectus, we have not offered or sold any securities pursuant to General Instruction I.B.6 of Form S-3.

Investing in these securities involves certain risks. See "*Risk Factors*" included on page 6 of this prospectus, in any accompanying prospectus supplement and in the documents incorporated by reference in this prospectus for a discussion of the factors you should carefully consider before deciding to purchase these securities.

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

The date of this prospectus is July 19, 2016

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, which we refer to as the SEC, utilizing a "shelf" registration process. Under this shelf registration process, we may from time to time sell any combination of the securities described in this prospectus in one or more offerings for an aggregate initial offering price of up to $100,000,000

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide one or more prospectus supplements that will contain specific information about the terms of the offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and the accompanying prospectus supplement together with the additional information described under the heading "Where You Can Find More Information" beginning on page 2 of this prospectus.

You should rely only on the information contained in or incorporated by reference in this prospectus, any accompanying prospectus supplement or in any related free writing prospectus filed by us with the SEC. We have not authorized anyone to provide you with different information. This prospectus and any accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in this prospectus or such accompanying prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, any prospectus supplement, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Unless the context otherwise indicates, references in this prospectus to "we," "our" and "us" refer, collectively, to Catabasis Pharmaceuticals, Inc., a Delaware corporation, and its consolidated subsidiary.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at www.catabasis.com. Our website is not a part of this prospectus and is not incorporated by reference in this prospectus. You may also read and copy any document we file at the SEC's Public Reference Room, 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

This prospectus is part of a registration statement we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and our consolidated subsidiary and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below (File No. 001-37467) and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of the initial registration statement and the effectiveness of the registration statement and following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2015, including the information specifically incorporated by reference into the Annual Report on Form 10-K from our definitive proxy statement for the 2016 Annual Meeting of Stockholders;
- Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2016;
- Current Reports on Form 8-K filed on April 1, 2016, April 11, 2016, April 19, 2016, June 20, 2016 and July 1, 2016; and
- The description of our common stock contained in our Registration Statement on Form 8-A filed on June 23, 2015, including any amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

Catabasis Pharmaceuticals, Inc.
One Kendall Square
Building 1400E, Suite B14202
Cambridge, MA 02139
Attn: Investor Relations
(617) 349-1971

FORWARD-LOOKING STATEMENTS

This prospectus and the information incorporated by reference in this prospectus include "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. These statements are based on current expectations, estimates, forecasts and projections about the industry in which we operate and the beliefs and assumptions of our management. The words "anticipate," "believe," "goals," "seek," "estimate," "expect," "hypothesize," "intend," "may," "might," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus and the information incorporated by reference in this prospectus include, among other things, statements about:

- our plans to identify, develop and commercialize novel therapeutics based on our SMART linker technology platform;
- 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 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.

You are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are referenced in the section of any accompanying prospectus supplement entitled "Risk Factors." You should also carefully review the risk factors and cautionary statements described in the other documents we file from time to time with the SEC, specifically our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K. Except as required by law, we do not undertake or plan to update or revise any such forward-looking statements to reflect actual results, changes in plans, assumptions, estimates or projections or other circumstances affecting such forward-looking statements occurring after the date of this prospectus, even if such results, changes or circumstances make it clear that any forward-looking information will not be realized. Any public statements or disclosures by us following this prospectus

which modify or impact any of the forward-looking statements contained in this prospectus will be deemed to modify or supersede such statements in this prospectus.

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. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

CATABASIS PHARMACEUTICALS, INC.

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 drug discovery platform. Our SMART linker drug discovery platform enables us to engineer product candidates that can simultaneously modulate multiple targets in a disease. Our proprietary product candidates impact pathways that are central to diseases where efficacy may be optimized by a multiple target approach. Our primary focus is on treatments for rare diseases. We have applied our SMART linker drug discovery platform to build an internal pipeline of product candidates for rare diseases and plan to pursue partnerships to develop additional product candidates.

Our principal executive offices are located at One Kendall Square, Building 1400E, Suite B14202, Cambridge, Massachusetts 02139, and our telephone number is (617) 349-1971.

RISK FACTORS

An investment in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks and uncertainties described under the section captioned "Risk Factors" contained in our most recent Annual Report on Form 10-K and other filings we make with the SEC from time to time, which are incorporated by reference herein in their entirety, together with other information in this prospectus, the information and documents incorporated by reference in this prospectus, and in any prospectus supplement or free writing prospectus that we authorize for use in connection with this offering. If any of these risks actually occur, our business, financial condition, results of operations or cash flow could suffer materially. In such event, the trading price of our common stock could decline and you might lose all or part of your investment.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of any securities offered under this prospectus for general corporate purposes unless otherwise indicated in the applicable prospectus supplement. General corporate purposes may include research and development expenditures, repayment and refinancing of debt, and working capital and capital expenditures. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will retain broad discretion over the allocation of the net proceeds.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is intended as a summary only and therefore is not a complete description of our capital stock. This description is based upon, and is qualified by reference to, our certificate of incorporation, our by-laws and applicable provisions of Delaware corporate law. You should read our certificate of incorporation and by-laws, which are filed as exhibits to the registration statement of which this prospectus forms a part, for the provisions that are important to you.

Our authorized capital stock consists of 150,000,000 shares of common stock, $0.001 par value per share, and 5,000,000 shares of preferred stock, $0.001 par value per share. As of June 30, 2016, 15,381,418 shares of common stock were outstanding and no shares of preferred stock were outstanding.

Common Stock

Voting Rights. Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders, except that unless otherwise required by law, holders of our common stock are not entitled to vote on any amendment to the certificate of incorporation that relates solely to the terms of one or more outstanding series of preferred stock, if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more such other series, to vote thereon pursuant to the certificate of incorporation. Holders of our common stock do not have cumulative voting rights.

An election of directors will be decided by a plurality of the votes cast by the stockholders entitled to vote on the election at a duly held stockholders' meeting at which a quorum is present. All other questions will be decided by a majority of the votes cast by stockholders entitled to vote thereon at a duly held meeting of stockholders at which a quorum is present, except when a different vote is required by law, our certificate of incorporation or by-laws.

Dividends. 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 or other rights of any series of preferred stock that we may designate and issue in the future.

Liquidation and Dissolution. In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net 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.

Other Rights. 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.

Transfer Agent and Registrar. The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Listing on The NASDAQ Global Market. Our common stock is listed on The NASDAQ Global Market under the symbol "CATB."

Preferred Stock

We are authorized to issue "blank check" preferred stock, which may be issued in one or more series upon authorization of our board of directors. Our board of directors is authorized to fix the designation of the series, the number of authorized shares of the series, dividend rights and terms,

conversion rights, voting rights, redemption rights and terms, liquidation preferences and any other rights, powers, preferences and limitations applicable to each series of preferred stock. The authorized shares of our preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. If the approval of our stockholders is not required for the issuance of shares of our preferred stock, our board may determine not to seek stockholder approval. The specific terms of any series of preferred stock offered pursuant to this prospectus will be described in the prospectus supplement relating to that series of preferred stock.

A series of our preferred stock could, depending on the terms of such series, impede the completion of a merger, tender offer or other takeover attempt. Our board of directors will make any determination to issue preferred shares based upon its judgment as to the best interests of our stockholders. Our directors, in so acting, could issue preferred stock having terms that could discourage an acquisition attempt through which an acquirer may be able to change the composition of our board of directors, including a tender offer or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then-current market price of the stock.

The preferred stock has the terms described below unless otherwise provided in the prospectus supplement relating to a particular series of preferred stock. You should read the prospectus supplement relating to the particular series of preferred stock being offered for specific terms, including:

- the designation and stated value per share of the preferred stock and the number of shares offered;
- the amount of liquidation preference per share;
- the price at which the preferred stock will be issued;
- the dividend rate, or method of calculation of dividends, the dates on which dividends will be payable, whether dividends will be cumulative or noncumulative and, if cumulative, the dates from which dividends will commence to accumulate;
- any redemption or sinking fund provisions;
- if other than the currency of the United States, the currency or currencies including composite currencies in which the preferred stock is denominated and/or in which payments will or may be payable;
- any conversion provisions;
- whether we have elected to offer depositary shares as described under "Description of Depositary Shares"; and
- any other rights, preferences, privileges, limitations and restrictions on the preferred stock.

The preferred stock will, when issued, be fully paid and non-assessable. Unless otherwise specified in the prospectus supplement, each series of preferred stock will rank equally as to dividends and liquidation rights in all respects with each other series of preferred stock. The rights of holders of shares of each series of preferred stock will be subordinate to those of our general creditors.

As described under "Description of Depositary Shares," we may, at our option, with respect to any series of preferred stock, elect to offer fractional interests in shares of preferred stock, and provide for the issuance of depositary receipts representing depositary shares, each of which will represent a fractional interest in a share of the series of preferred stock. The fractional interest will be specified in the prospectus supplement relating to a particular series of preferred stock.

Rank. Unless otherwise specified in the prospectus supplement, the preferred stock will, with respect to dividend rights and rights upon our liquidation, dissolution or winding up of our affairs, rank:

- senior to our common stock and to all equity securities ranking junior to such preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs;

- on a parity with all equity securities issued by us, the terms of which specifically provide that such equity securities rank on a parity with the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs; and

- junior to all equity securities issued by us, the terms of which specifically provide that such equity securities rank senior to the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs.

The term "equity securities" does not include convertible debt securities.

Dividends. Holders of the preferred stock of each series will be entitled to receive, when, as and if declared by our board of directors, cash dividends at such rates and on such dates described in the prospectus supplement. Different series of preferred stock may be entitled to dividends at different rates or based on different methods of calculation. The dividend rate may be fixed or variable or both. Dividends will be payable to the holders of record as they appear on our stock books on record dates fixed by our board of directors, as specified in the applicable prospectus supplement.

Dividends on any series of preferred stock may be cumulative or noncumulative, as described in the applicable prospectus supplement. If our board of directors does not declare a dividend payable on a dividend payment date on any series of noncumulative preferred stock, then the holders of that noncumulative preferred stock will have no right to receive a dividend for that dividend payment date, and we will have no obligation to pay the dividend accrued for that period, whether or not dividends on that series are declared payable on any future dividend payment dates. Dividends on any series of cumulative preferred stock will accrue from the date we initially issue shares of such series or such other date specified in the applicable prospectus supplement.

No dividends may be declared or paid or funds set apart for the payment of any dividends on any parity securities unless full dividends have been paid or set apart for payment on the preferred stock. If full dividends are not paid, the preferred stock will share dividends pro rata with the parity securities.

No dividends may be declared or paid or funds set apart for the payment of dividends on any junior securities unless full dividends for all dividend periods terminating on or prior to the date of the declaration or payment will have been paid or declared and a sum sufficient for the payment set apart for payment on the preferred stock.

Liquidation Preference. Upon any voluntary or involuntary liquidation, dissolution or winding up of our affairs, then, before we make any distribution or payment to the holders of any common stock or any other class or series of our capital stock ranking junior to the preferred stock in the distribution of assets upon any liquidation, dissolution or winding up of our affairs, the holders of each series of preferred stock shall be entitled to receive out of assets legally available for distribution to stockholders, liquidating distributions in the amount of the liquidation preference per share set forth in the prospectus supplement, plus any accrued and unpaid dividends thereon. Such dividends will not include any accumulation in respect of unpaid noncumulative dividends for prior dividend periods. Unless otherwise specified in the prospectus supplement, after payment of the full amount of their liquidating distributions, the holders of preferred stock will have no right or claim to any of our remaining assets. Upon any such voluntary or involuntary liquidation, dissolution or winding up, if our available assets are insufficient to pay the amount of the liquidating distributions on all outstanding

preferred stock and the corresponding amounts payable on all other classes or series of our capital stock ranking on parity with the preferred stock and all other such classes or series of shares of capital stock ranking on parity with the preferred stock in the distribution of assets, then the holders of the preferred stock and all other such classes or series of capital stock will share ratably in any such distribution of assets in proportion to the full liquidating distributions to which they would otherwise be entitled.

Upon any such liquidation, dissolution or winding up and if we have made liquidating distributions in full to all holders of preferred stock, we will distribute our remaining assets among the holders of any other classes or series of capital stock ranking junior to the preferred stock according to their respective rights and preferences and, in each case, according to their respective number of shares. For such purposes, our consolidation or merger with or into any other corporation, trust or entity, or the sale, lease or conveyance of all or substantially all of our property or assets will not be deemed to constitute a liquidation, dissolution or winding up of our affairs.

Redemption. If so provided in the applicable prospectus supplement, the preferred stock will be subject to mandatory redemption or redemption at our option, as a whole or in part, in each case upon the terms, at the times and at the redemption prices set forth in such prospectus supplement.

The prospectus supplement relating to a series of preferred stock that is subject to mandatory redemption will specify the number of shares of preferred stock that shall be redeemed by us in each year commencing after a date to be specified, at a redemption price per share to be specified, together with an amount equal to all accrued and unpaid dividends thereon to the date of redemption. Unless the shares have a cumulative dividend, such accrued dividends will not include any accumulation in respect of unpaid dividends for prior dividend periods. We may pay the redemption price in cash or other property, as specified in the applicable prospectus supplement. If the redemption price for preferred stock of any series is payable only from the net proceeds of the issuance of shares of our capital stock, the terms of such preferred stock may provide that, if no such shares of our capital stock shall have been issued or to the extent the net proceeds from any issuance are insufficient to pay in full the aggregate redemption price then due, such preferred stock shall automatically and mandatorily be converted into the applicable shares of our capital stock pursuant to conversion provisions specified in the applicable prospectus supplement. Notwithstanding the foregoing, we will not redeem any preferred stock of a series unless:

- if that series of preferred stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on the preferred stock for all past dividend periods and the then current dividend period; or

- if such series of preferred stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends for the then current dividend period.

In addition, we will not acquire any preferred stock of a series unless:

- if that series of preferred stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on all outstanding shares of such series of preferred stock for all past dividend periods and the then current dividend period; or

- if that series of preferred stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends on the preferred stock of such series for the then current dividend period.

However, at any time we may purchase or acquire preferred stock of that series (1) pursuant to a purchase or exchange offer made on the same terms to holders of all outstanding preferred stock of

such series or (2) by conversion into or exchange for shares of our capital stock ranking junior to the preferred stock of such series as to dividends and upon liquidation.

If fewer than all of the outstanding shares of preferred stock of any series are to be redeemed, we will determine the number of shares that may be redeemed pro rata from the holders of record of such shares in proportion to the number of such shares held or for which redemption is requested by such holder or by any other equitable manner that we determine. Such determination will reflect adjustments to avoid redemption of fractional shares.

Unless otherwise specified in the prospectus supplement, we will mail notice of redemption at least 30 days but not more than 60 days before the redemption date to each holder of record of preferred stock to be redeemed at the address shown on our stock transfer books. Each notice shall state:

- the redemption date;
- the number of shares and series of preferred stock to be redeemed;
- the redemption price;
- the place or places where certificates for such preferred stock are to be surrendered for payment of the redemption price;
- that dividends on the shares to be redeemed will cease to accrue on such redemption date;
- the date on which the holder's conversion rights, if any, as to such shares shall terminate; and
- the specific number of shares to be redeemed from each such holder if fewer than all the shares of any series are to be redeemed.

If notice of redemption has been given and we have set aside the funds necessary for such redemption in trust for the benefit of the holders of any shares called for redemption, then from and after the redemption date, dividends will cease to accrue on such shares, and all rights of the holders of such shares will terminate, except the right to receive the redemption price.

Voting Rights. Holders of preferred stock will not have any voting rights, except as required by law or as indicated in the applicable prospectus supplement.

Unless otherwise provided for under the terms of any series of preferred stock, no consent or vote of the holders of shares of preferred stock or any series thereof shall be required for any amendment to our certificate of incorporation that would increase the number of authorized shares of preferred stock or the number of authorized shares of any series thereof or decrease the number of authorized shares of preferred stock or the number of authorized shares of any series thereof (but not below the number of authorized shares of preferred stock or such series, as the case may be, then outstanding).

Conversion Rights. The terms and conditions, if any, upon which any series of preferred stock is convertible into our common stock will be set forth in the applicable prospectus supplement relating thereto. Such terms will include the number of shares of common stock into which the shares of preferred stock are convertible, the conversion price, rate or manner of calculation thereof, the conversion period, provisions as to whether conversion will be at our option or at the option of the holders of the preferred stock, the events requiring an adjustment of the conversion price and provisions affecting conversion in the event of the redemption.

Transfer Agent and Registrar. The transfer agent and registrar for the preferred stock will be set forth in the applicable prospectus supplement.

Provisions of Our Certificate of Incorporation and By-laws and Delaware Law That May Have Anti-Takeover Effects

Delaware law, our certificate of incorporation and our bylaws 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

Our certificate of incorporation and bylaws divide our board of directors into three classes with staggered three-year terms. In addition, a director is only 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, is only 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

Our certificate of incorporation provides that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of our stockholders and may not be effected by any consent in writing by our stockholders. Our certificate of incorporation and bylaws 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

Our bylaws 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 are only 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

We are 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. 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

Our certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or if the Court of Chancery does not have jurisdiction, the federal district court for the District 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, officers or employees 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, or (4) 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.

DESCRIPTION OF DEPOSITARY SHARES

General

We may, at our option, elect to offer fractional shares of preferred stock, which we call depositary shares, rather than full shares of preferred stock. If we do, we will issue to the public receipts, called depositary receipts, for depositary shares, each of which will represent a fraction, to be described in the applicable prospectus supplement, of a share of a particular series of preferred stock. Unless otherwise provided in the prospectus supplement, each owner of a depositary share will be entitled, in proportion to the applicable fractional interest in a share of preferred stock represented by the depositary share, to all the rights and preferences of the preferred stock represented by the depositary share. Those rights include dividend, voting, redemption, conversion and liquidation rights.

The shares of preferred stock underlying the depositary shares will be deposited with a bank or trust company selected by us to act as depositary under a deposit agreement between us, the depositary and the holders of the depositary receipts. The depositary will be the transfer agent, registrar and dividend disbursing agent for the depositary shares.

The depositary shares will be evidenced by depositary receipts issued pursuant to the deposit agreement. Holders of depositary receipts agree to be bound by the deposit agreement, which requires holders to take certain actions such as filing proof of residence and paying certain charges.

The summary of terms of the depositary shares contained in this prospectus is not a complete description of the terms of the depository shares. You should refer to the form of the deposit agreement, our certificate of incorporation and the certificate of designation for the applicable series of preferred stock that are, or will be, filed with the SEC.

Dividends and Other Distributions

The depositary will distribute all cash dividends or other cash distributions, if any, received in respect of the preferred stock underlying the depositary shares to the record holders of depositary shares in proportion to the numbers of depositary shares owned by those holders on the relevant record date. The relevant record date for depositary shares will be the same date as the record date for the underlying preferred stock.

If there is a distribution other than in cash, the depositary will distribute property (including securities) received by it to the record holders of depositary shares, unless the depositary determines that it is not feasible to make the distribution. If this occurs, the depositary may, with our approval, adopt another method for the distribution, including selling the property and distributing the net proceeds from the sale to the holders.

Liquidation Preference

If a series of preferred stock underlying the depositary shares has a liquidation preference, in the event of the voluntary or involuntary liquidation, dissolution or winding up of us, holders of depositary shares will be entitled to receive the fraction of the liquidation preference accorded each share of the applicable series of preferred stock, as set forth in the applicable prospectus supplement.

Withdrawal of Stock

Unless the related depositary shares have been previously called for redemption, upon surrender of the depositary receipts at the office of the depositary, the holder of the depositary shares will be entitled to delivery, at the office of the depositary to or upon his or her order, of the number of whole shares of the preferred stock and any money or other property represented by the depositary shares. If the depositary receipts delivered by the holder evidence a number of depositary shares in excess of the

number of depositary shares representing the number of whole shares of preferred stock to be withdrawn, the depositary will deliver to the holder at the same time a new depositary receipt evidencing the excess number of depositary shares. In no event will the depositary deliver fractional shares of preferred stock upon surrender of depositary receipts. Holders of preferred stock thus withdrawn may not thereafter deposit those shares under the deposit agreement or receive depositary receipts evidencing depositary shares therefor.

Redemption of Depositary Shares

Whenever we redeem shares of preferred stock held by the depositary, the depositary will redeem as of the same redemption date the number of depositary shares representing shares of the preferred stock so redeemed, so long as we have paid in full to the depositary the redemption price of the preferred stock to be redeemed plus an amount equal to any accumulated and unpaid dividends on the preferred stock to the date fixed for redemption. The redemption price per depositary share will be equal to the redemption price and any other amounts per share payable on the preferred stock multiplied by the fraction of a share of preferred stock represented by one depositary share. If less than all the depositary shares are to be redeemed, the depositary shares to be redeemed will be selected by lot or pro rata or by any other equitable method as may be determined by the depositary.

After the date fixed for redemption, depositary shares called for redemption will no longer be deemed to be outstanding and all rights of the holders of depositary shares will cease, except the right to receive the monies payable upon redemption and any money or other property to which the holders of the depositary shares were entitled upon redemption upon surrender to the depositary of the depositary receipts evidencing the depositary shares.

Voting the Preferred Stock

Upon receipt of notice of any meeting at which the holders of the preferred stock are entitled to vote, the depositary will mail the information contained in the notice of meeting to the record holders of the depositary receipts relating to that preferred stock. The record date for the depositary receipts relating to the preferred stock will be the same date as the record date for the preferred stock. Each record holder of the depositary shares on the record date will be entitled to instruct the depositary as to the exercise of the voting rights pertaining to the number of shares of preferred stock represented by that holder's depositary shares. The depositary will endeavor, insofar as practicable, to vote the number of shares of preferred stock represented by the depositary shares in accordance with those instructions, and we will agree to take all action that may be deemed necessary by the depositary in order to enable the depositary to do so. The depositary will not vote any shares of preferred stock except to the extent it receives specific instructions from the holders of depositary shares representing that number of shares of preferred stock.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will pay charges of the depositary in connection with the initial deposit of the preferred stock and any redemption of the preferred stock. Holders of depositary receipts will pay transfer, income and other taxes and governmental charges and such other charges (including those in connection with the receipt and distribution of dividends, the sale or exercise of rights, the withdrawal of the preferred stock and the transferring, splitting or grouping of depositary receipts) as are expressly provided in the deposit agreement to be for their accounts. If these charges have not been paid by the holders of depositary receipts, the depositary may refuse to transfer depositary shares, withhold dividends and distributions and sell the depositary shares evidenced by the depositary receipt.

Amendment and Termination of the Deposit Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement may be amended by agreement between us and the depositary. However, any amendment that materially and adversely alters the rights of the holders of depositary shares, other than fee changes, will not be effective unless the amendment has been approved by the holders of a majority of the outstanding depositary shares. The deposit agreement may be terminated by the depositary or us only if:

- all outstanding depositary shares have been redeemed; or
- there has been a final distribution of the preferred stock in connection with our dissolution and such distribution has been made to all the holders of depositary shares.

Resignation and Removal of Depositary

The depositary may resign at any time by delivering to us notice of its election to do so, and we may remove the depositary at any time. Any resignation or removal of the depositary will take effect upon our appointment of a successor depositary and its acceptance of such appointment. The successor depositary must be appointed within 60 days after delivery of the notice of resignation or removal and must be a bank or trust company having its principal office in the United States and having the requisite combined capital and surplus as set forth in the applicable agreement.

Notices

The depositary will forward to holders of depositary receipts all notices, reports and other communications, including proxy solicitation materials received from us, that are delivered to the depositary and that we are required to furnish to the holders of the preferred stock. In addition, the depositary will make available for inspection by holders of depositary receipts at the principal office of the depositary, and at such other places as it may from time to time deem advisable, any reports and communications we deliver to the depositary as the holder of preferred stock.

Limitation of Liability

Neither we nor the depositary will be liable if either we or it is prevented or delayed by law or any circumstance beyond its control in performing its obligations. Our obligations and those of the depositary will be limited to performance in good faith of our and their duties thereunder. We and the depositary will not be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or preferred stock unless satisfactory indemnity is furnished. We and the depositary may rely upon written advice of counsel or accountants, on information provided by persons presenting preferred stock for deposit, holders of depositary receipts or other persons believed to be competent to give such information and on documents believed to be genuine and to have been signed or presented by the proper party or parties.

DESCRIPTION OF UNITS

We may issue units comprised of one or more of the other securities that may be offered under this prospectus, in any combination. The following, together with the additional information we may include in the applicable prospectus supplement, summarizes the material terms and provisions of the units that we may offer under this prospectus. While the terms summarized below will apply generally to any units we may offer, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement.

Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately at any time, or at any time before a specified date.

Any applicable prospectus supplement will describe:

- the material terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any material provisions relating to the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- any material provisions of the governing unit agreement that differ from those described above.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase common stock, preferred stock or depositary shares. We may offer warrants separately or together with one or more additional warrants, common stock, preferred stock or depositary shares, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. If we issue warrants as part of a unit, the accompanying prospectus supplement will specify whether those warrants may be separated from the other securities in the unit prior to the expiration date of the warrants. The applicable prospectus supplement will also describe the following terms of any warrants:

- the specific designation and aggregate number of, and the offering price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
- whether the warrants are to be sold separately or with other securities as parts of units;
- whether the warrants will be issued in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;
- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;
- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- the designation and terms of any equity securities purchasable upon exercise of the warrants;
- if applicable, the designation and terms of the preferred stock or depositary shares with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which any warrants issued as part of a unit and the related preferred stock, depositary shares or common stock will be separately transferable;
- the number of shares of common stock, preferred stock or depositary shares purchasable upon exercise of a warrant and the price at which those shares may be purchased;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the anti-dilution provisions of, and other provisions for changes to or adjustment in the exercise price of, the warrants, if any;
- any redemption or call provisions; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange or exercise of the warrants.

FORMS OF SECURITIES

Each depositary share, warrant and unit will be represented either by a certificate issued in definitive form to a particular investor or by one or more global securities representing the entire issuance of securities. Unless the applicable prospectus supplement provides otherwise, certificated securities in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the securities to the registrar, paying agent or other agent, as applicable. Global securities name a depositary or its nominee as the owner of the depositary shares, warrants or units represented by these global securities. The depositary maintains a computerized system that will reflect each investor's beneficial ownership of the securities through an account maintained by the investor with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

Global Securities

We may issue the depositary shares, warrants and units in the form of one or more fully registered global securities that will be deposited with a depositary or its nominee identified in the applicable prospectus supplement and registered in the name of that depositary or nominee. In those cases, one or more global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate principal or face amount of the securities to be represented by global securities. Unless and until it is exchanged in whole for securities in definitive registered form, a global security may not be transferred except as a whole by and among the depositary for the global security, the nominees of the depositary or any successors of the depositary or those nominees.

If not described below, any specific terms of the depositary arrangement with respect to any securities to be represented by a global security will be described in the prospectus supplement relating to those securities. We anticipate that the following provisions will apply to all depositary arrangements.

Ownership of beneficial interests in a global security will be limited to persons, called participants, that have accounts with the depositary or persons that may hold interests through participants. Upon the issuance of a global security, the depositary will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depositary, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some states may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair your ability to own, transfer or pledge beneficial interests in global securities.

So long as the depositary, or its nominee, is the registered owner of a global security, that depositary or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the global security for all purposes under the applicable deposit agreement, warrant agreement or unit agreement. Except as described below, owners of beneficial interests in a global security will not be entitled to have the securities represented by the global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the applicable deposit agreement, unit agreement or warrant agreement. Accordingly, each person owning a beneficial interest in a global security must rely on the procedures of the depositary for that global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the applicable deposit agreement, unit agreement or

warrant agreement. We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a global security desires to give or take any action that a holder is entitled to give or take under the applicable deposit agreement, unit agreement or warrant agreement, the depositary for the global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

Any payments to holders with respect to depositary shares, warrants or units, represented by a global security registered in the name of a depositary or its nominee will be made to the depositary or its nominee, as the case may be, as the registered owner of the global security. None of us, or any warrant agent, unit agent or other agent of ours, or any agent of any warrant agent or unit agent will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depositary for any of the securities represented by a global security, upon receipt of any payment to holders of principal, premium, interest or other distribution of underlying securities or other property on that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that global security as shown on the records of the depositary. We also expect that payments by participants to owners of beneficial interests in a global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers or registered in "street name," and will be the responsibility of those participants.

If the depositary for any of the securities represented by a global security is at any time unwilling or unable to continue as depositary or ceases to be a clearing agency registered under the Exchange Act, and a successor depositary registered as a clearing agency under the Exchange Act is not appointed by us within 90 days, we will issue securities in definitive form in exchange for the global security that had been held by the depositary. Any securities issued in definitive form in exchange for a global security will be registered in the name or names that the depositary gives to the relevant warrant agent, unit agent or other relevant agent of ours or theirs. It is expected that the depositary's instructions will be based upon directions received by the depositary from participants with respect to ownership of beneficial interests in the global security that had been held by the depositary.

PLAN OF DISTRIBUTION

We may sell securities:

- through underwriters;
- through dealers;
- through agents;
- directly to purchasers; or
- through a combination of any of these methods of sale.

In addition, we may issue the securities as a dividend or distribution or in a subscription rights offering to our existing security holders. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

We may directly solicit offers to purchase securities, or agents may be designated to solicit such offers. We will, in the prospectus supplement relating to such offering, name any agent that could be viewed as an underwriter under the Securities Act, and describe any commissions that we must pay. Any such agent will be acting on a best efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis.

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price, or prices, which may be changed from time to time;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions.

The prospectus supplement with respect to the securities of a particular series will describe the terms of the offering of the securities, including the following:

- the name of the agent or any underwriters;
- the public offering or purchase price and the proceeds we will receive from the sale of the securities;
- any discounts and commissions to be allowed or re-allowed or paid to the agent or underwriters;
- all other items constituting underwriting compensation;
- any discounts and commissions to be allowed or re-allowed or paid to dealers; and
- any exchanges on which the securities will be listed.

If any underwriters or agents are utilized in the sale of the securities in respect of which this prospectus is delivered, we will enter into an underwriting agreement or other agreement with them at the time of sale to them, and we will set forth in the prospectus supplement relating to such offering the names of the underwriters or agents and the terms of the related agreement with them.

If a dealer is utilized in the sale of the securities in respect of which this prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

If we offer securities in a subscription rights offering to our existing security holders, we may enter into a standby underwriting agreement with dealers, acting as standby underwriters. We may pay the standby underwriters a commitment fee for the securities they commit to purchase on a standby basis. If we do not enter into a standby underwriting arrangement, we may retain a dealer-manager to manage a subscription rights offering for us.

Remarketing firms, agents, underwriters, dealers and other persons may be entitled under agreements which they may enter into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, and may be customers of, engage in transactions with or perform services for us in the ordinary course of business.

If so indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in the prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except that:

- the purchase by an institution of the securities covered under that contract shall not at the time of delivery be prohibited under the laws of the jurisdiction to which that institution is subject; and

- if the securities are also being sold to underwriters acting as principals for their own account, the underwriters shall have purchased such securities not sold for delayed delivery. The underwriters and other persons acting as our agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

Certain agents, underwriters and dealers, and their associates and affiliates may be customers of, have borrowing relationships with, engage in other transactions with, and/or perform services, including investment banking services, for us or one or more of our respective affiliates in the ordinary course of business.

In order to facilitate the offering of the securities, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the securities or any other securities the prices of which may be used to determine payments on such securities. Specifically, any underwriters may overallot in connection with the offering, creating a short position for their own accounts. In addition, to cover overallotments or to stabilize the price of the securities or of any such other securities, the underwriters may bid for, and purchase, the securities or any such other securities in the open market. Finally, in any offering of the securities through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the securities in the offering if the syndicate repurchases previously distributed securities in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the securities above independent market levels. Any such underwriters are not required to engage in these activities and may end any of these activities at any time.

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in three business days, unless the parties to any such trade expressly agree otherwise. The applicable prospectus supplement may provide that the original issue date for your securities may be more than three scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the third business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are

expected to settle more than three scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

The securities may be new issues of securities and may have no established trading market. The securities may or may not be listed on a national securities exchange. We can make no assurance as to the liquidity of or the existence of trading markets for any of the securities.

In compliance with the guidelines of the Financial Industry Regulatory Authority, or FINRA, the aggregate maximum discount, commission or agency fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer will not exceed 8% of the proceeds from any offering pursuant to this prospectus and any applicable prospectus supplement.

LEGAL MATTERS

Unless the applicable prospectus supplement indicates otherwise, the validity of the securities in respect of which this prospectus is being delivered will be passed upon by Wilmer Cutler Pickering Hale and Dorr LLP, Boston, Massachusetts.

EXPERTS

The consolidated financial statements of Catabasis Pharmaceuticals, Inc. included in the Company's Annual Report on Form 10-K for the year ended December 31, 2015, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

CATABASIS PHARMACEUTICALS, INC.

Up to $10,000,000

Common Stock

PROSPECTUS SUPPLEMENT

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October 13, 2017