UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of report (Date of earliest event reported): **June 19, 2017**

Catabasis Pharmaceuticals, Inc.
(Exact Name of Registrant as Specified in Charter)

Delaware	**001-37467**	**26-3687168**
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

One Kendall Square Bldg. 1400E, Suite B14202 Cambridge, Massachusetts	**02139**
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: **(617) 349-1971**

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☒

Item 8.01. Other Events.

Catabasis Pharmaceuticals, Inc. (the "Company") is making publicly available an updated corporate slide presentation, which is filed as Exhibit 99.1 to this Current Report on Form 8-K and incorporated herein by reference. The updates focus on the functional improvements in boys receiving edasalonexent in the Company's Phase 2 MoveDMD trial. The Company believes that these functional improvements constitute important information for a Phase 3 clinical trial plan for edasalonexent in Duchenne muscular dystrophy, which the Company expects to announce in the second half of 2017.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

The Exhibit to this Current Report on Form 8-K is listed in the Exhibit Index attached hereto.

Cautionary Note Regarding Forward-Looking Statements

This Current Report on Form 8-K, including the corporate slide presentation filed as Exhibit 99.1 hereto, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, contained in this Current Report on Form 8-K, including statements regarding the Company's expectation of announcing a Phase 3 clinical trial plan for edasalonexent in Duchenne muscular dystrophy in the second half of 2017, are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. The Company may not actually achieve the plans, intentions or expectations disclosed in these forward-looking statements, and you should not place undue reliance on these forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in these forward-looking statements as a result of important risks and uncertainties, including those described in the cautionary statements included in the Company's most recent Quarterly Report on Form 10-Q, particularly in the "Risk Factors" section, which is on file with the Securities and Exchange Commission. Except as otherwise required by law, the Company disclaims any intention or obligation to update any forward-looking statements as a result of developments occurring after the date of this Current Report on Form 8-K.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

CATABASIS PHARMACEUTICALS, INC.

Date: June 19, 2017

By: /s/ Deirdre A. Cunnane
Deirdre A. Cunnane
Senior Vice President and General Counsel

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
99.1	Corporate slide presentation

Exhibit 99.1

Catabasis Pharmaceuticals Corporate Update

June 19, 2017

Forward Looking Statements

This presentation contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995, including statements regarding our expectations and beliefs about our business, future financial and operating performance, clinical trial plans, product development plans and prospects. The words "believe", "anticipate", "plans," "expect", "could", "should", "will", "would", "may", "intend" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements contained in this presentation and in remarks made during this presentation and the following Q&A session are subject to important risks and uncertainties that may cause actual events or results to differ materially from our current expectations and beliefs, including: uncertainties inherent in the initiation and completion of preclinical studies and clinical trials and clinical development of our product candidates; availability and timing of results from preclinical studies and clinical trials; whether interim results from a clinical trial will be predictive of the final results of the trial or the results of future trials; expectations for regulatory approvals to conduct trials or to market products; availability of funding sufficient for our foreseeable and unforeseeable operating expenses and capital expenditure requirements; other matters that could affect the availability or commercial potential of our product candidates; and general economic and market conditions. These and other risks are described under the caption "Risk Factors" in our Quarterly Report on Form 10-Q for the period ended March 31, 2017, which is on file with the Securities and Exchange Commission, and in other filings that we may make with the Securities and Exchange Commission in the future.

In addition, the forward-looking statements included in this presentation represent our views as of the date of this presentation. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this presentation.

Advancing Rare Disease Pipeline: Preparing for Phase 3 Trial in Duchenne Muscular Dystrophy

- **Edasalonexent completed placebo-controlled Phase 2 MoveDMD trial**
  - Oral inhibitor of NF-κB for all patients with DMD regardless of mutation
  - Open-label extension results expected in Q3 2017
  - Phase 3 trial plan expected in H2 2017
- **DMD is characterized by predictable, sequential loss of mobility and function**
  - Therapeutic goal is to delay the loss of function
- **MoveDMD Phase 2 results consistent with goal of DMD treatment**
  - A primary exploratory biomarker endpoint, not a pivotal endpoint, was not met
  - Clinically meaningful improvements observed in well established and pre-specified functional assessments
  - Functional assessments have precedence as endpoints in pivotal trials in DMD
  - Safe and well tolerated
- **Additional programs derived from SMART Linker technology including CAT-5571 for cystic fibrosis**

Pipeline of Product Candidates in Rare Diseases

Product Candidate (Pathway)	Discovery	Preclin	Phase 1	Phase 2	Phase 3
Edasalonexent CAT-1004 (NF-κB)	Duchenne muscular dystrophy				• Phase 2 complete • Open-label extension results in Q3 2017 • Phase 3 plan H2 2017
Edasalonexent CAT-1004 (NF-κB)	Additional rare disease				
CAT-5571 (Autophagy)	Cystic fibrosis		• IND activities ongoing • Phase 1 expected in 2018		
CAT-4001 (Nrf2/NF-κB)	Friedreich's ataxia ALS		• Continue ongoing preclinical work		

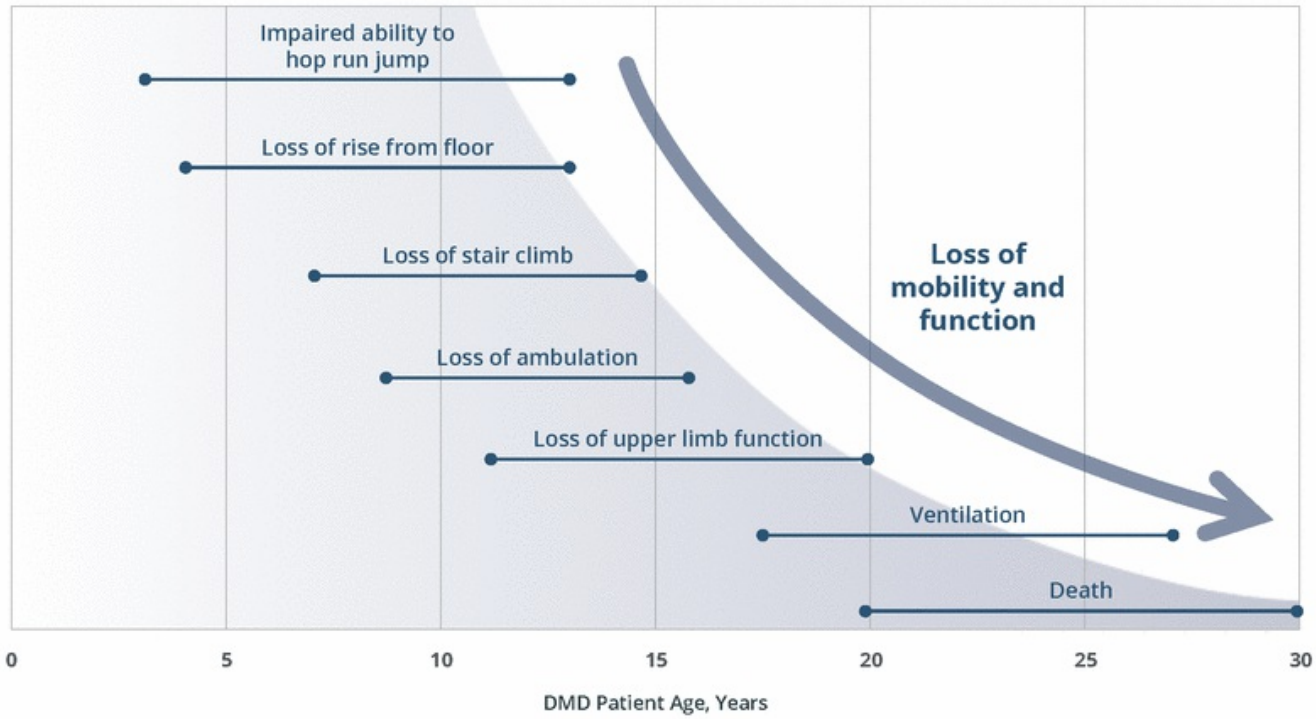
DMD Today

Duchenne Muscular Dystrophy: Preserving Function Is the Goal of Treatment

- DMD is a rare recessive X-linked genetic disorder characterized by dystrophin deficiency in muscle tissue and subsequent chronic activation of NF-κB that results in muscle degeneration and prevents muscle regeneration
- Overall decline in DMD is characterized by a predictable cascade of discrete losses of function and mobility milestones
- Preserving or extending each individual functional capability delays overall decline and prolongs life
- Current therapeutic modalities delay loss of function and forestall additional serious decline in mobility

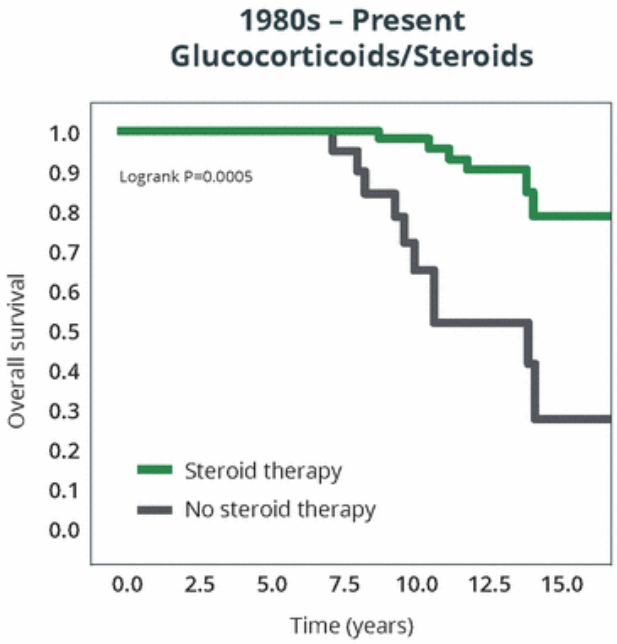
DMD Is Characterized by a Predictable Cascade of Discrete Losses of Function and Mobility Milestones

Typical DMD Disease Progression



Dr. Craig McDonald, Investor Day 2016

Steroids Are the Mainstay of Current DMD Treatment Because They Delay Loss of Function



- Steroids delay loss of function and prolong ambulation time and lifespan
- However, steroids are associated with adverse events including:
  - Cushing's syndrome
  - Obesity
  - Behavioral changes
  - Pubertal delay
  - Osteoporosis and fractures
  - Myopathy
- Side effects lead to patients both discontinuing steroid usage as well as not initiating treatment

Schram, et al. J Am Coll Cardiol 2013 61(9):948-954

Edasalonexent (CAT-1004) Program

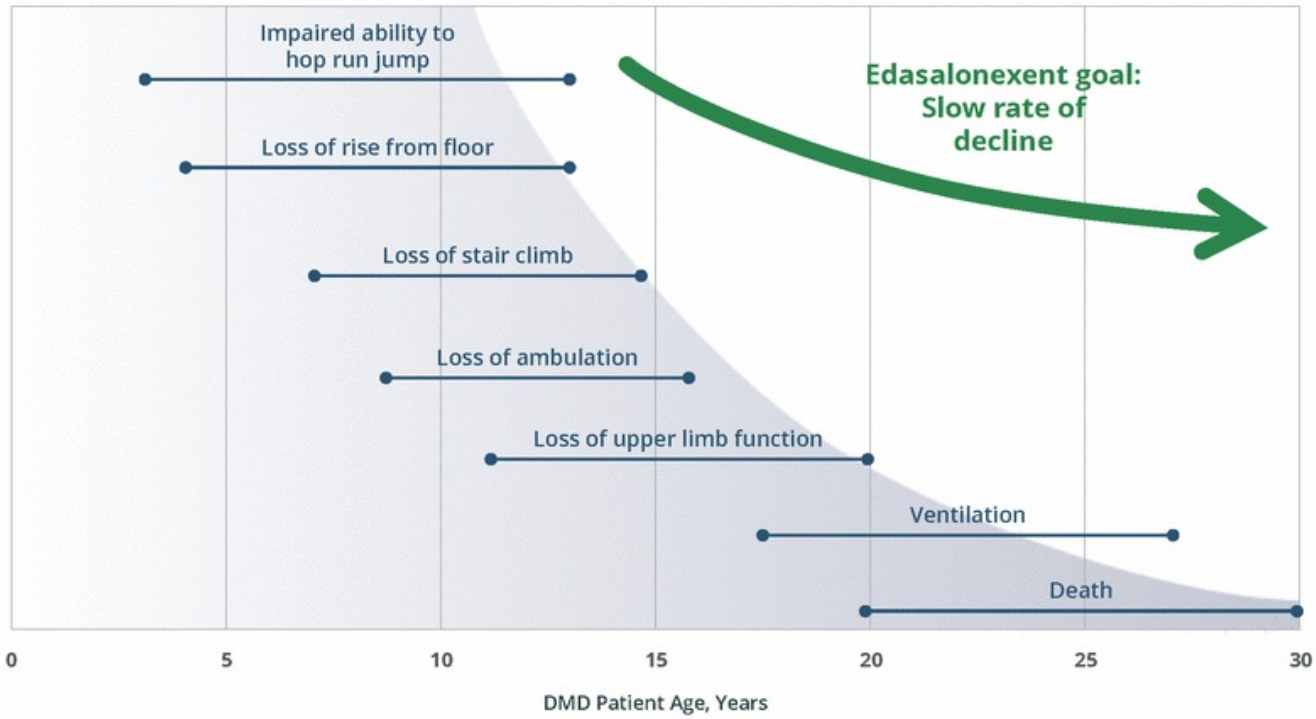
Oral small molecule designed to inhibit NF-κB for the treatment of Duchenne muscular dystrophy

Edasalonexent: Potential to Slow Disease Progression for All Boys with DMD

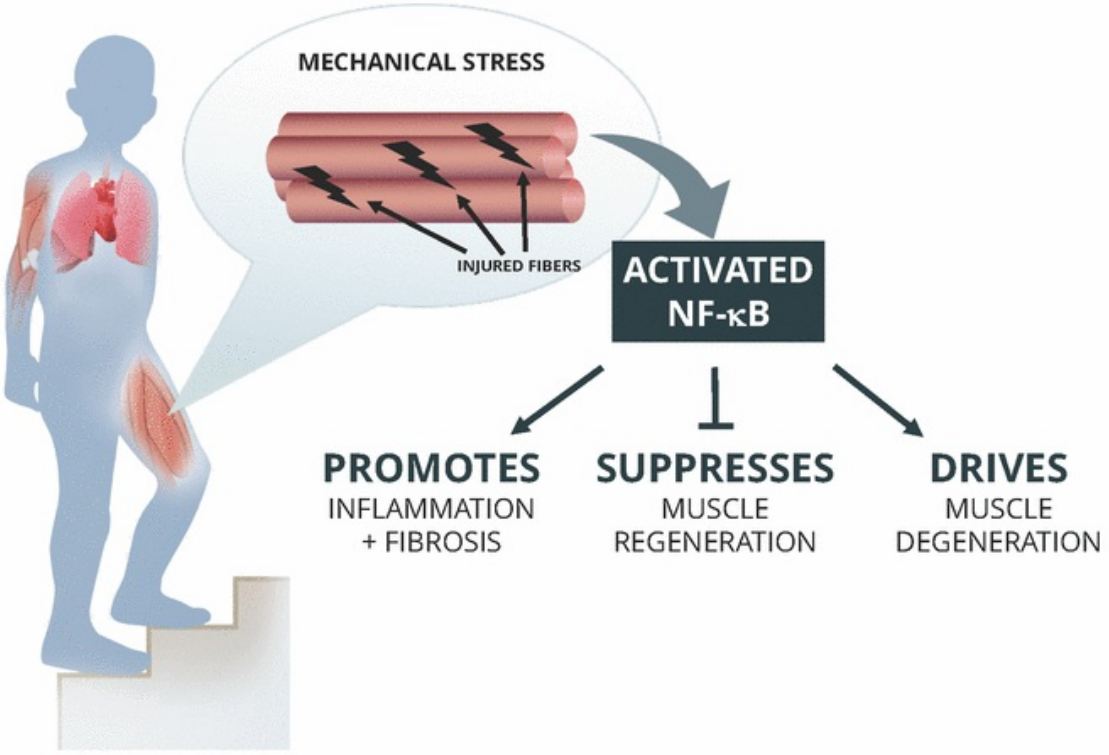
- **Investigational disease-modifying product candidate for all patients with DMD regardless of mutation**
- **Oral inhibitor of NF-κB, a protein that is chronically activated in DMD and drives muscle degeneration and suppresses muscle regeneration**
- **Reduction in rate of functional decline in MoveDMD Phase 2**
  - Clinically meaningful improvements observed in well established and pre-specified functional assessments
  - Functional assessments have precedence as endpoints in pivotal trials in DMD
  - Safe and well tolerated
- **Edasalonexent currently in open-label extension portion of MoveDMD trial**
  - Open-label extension results expected in Q3 2017
  - Phase 3 trial plan expected in H2 2017
- **Developing as monotherapy and also potentially combinable with any dystrophin targeted therapy**

DMD Is Characterized by a Predictable Cascade of Discrete Losses of Function and Mobility Milestones

Typical DMD Disease Progression

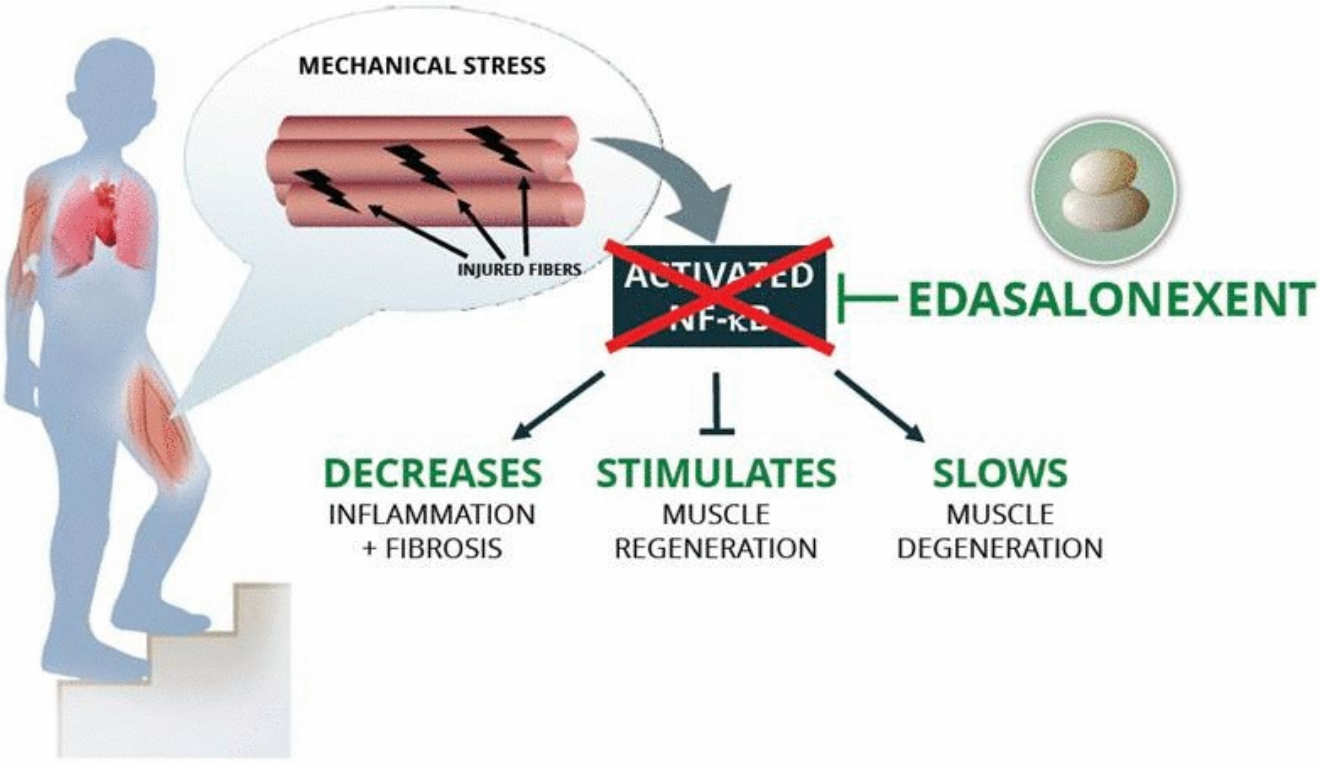


Edasalonexent Inhibits Activated NF-κB, Slows Muscle Degeneration, and Stimulates Muscle Regeneration



Hammers, et al. JCI Insight 2016 1(21): e90341

Edasalonexent Inhibits Activated NF-κB, Slows Muscle Degeneration, and Stimulates Muscle Regeneration



Hammers, et al. JCI Insight 2016 1(21): e90341

MoveDMD Phase 2 Demonstrated Favorable Delay in Loss of Function in Critical Function and Mobility Parameters

TWO PRE-SPECIFIED ANALYSES

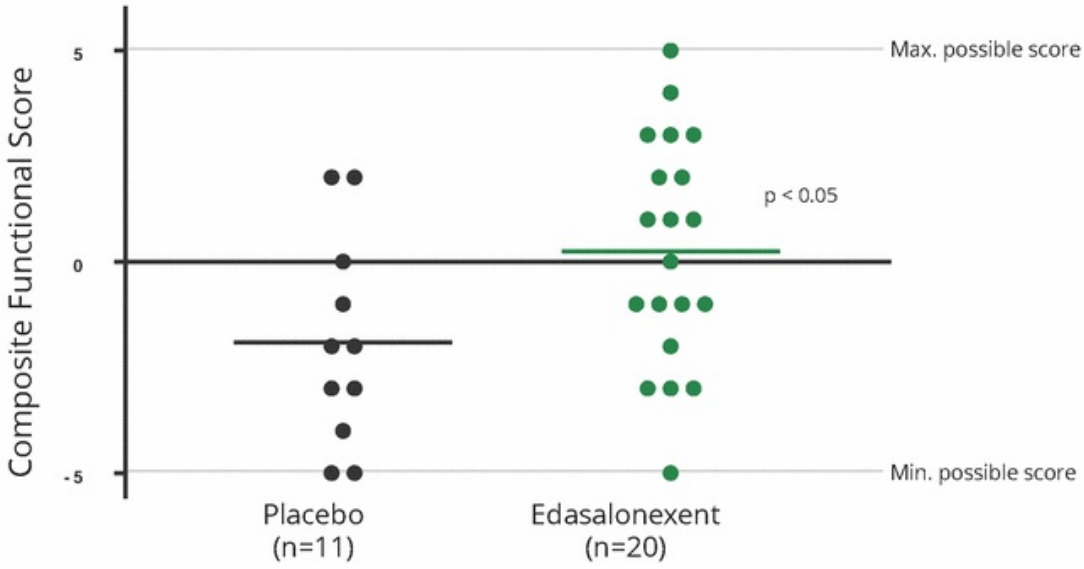
	Placebo-Controlled			Crossover
	Edasa 67 mg/kg/day (n=10)	Edasa 100 mg/kg/day (n=10)	Edasa Pooled (n=20)	Edasa Pooled (n=12)
10-meter walk/run	+	+	+	+
4-stair Climb	+	+	+	+
Time to stand	-	+	-	+
NSAA	+	+	+	+
PODCI	+	+	+	+*

* $p < 0.05$

Placebo-Controlled: Comparison of change from baseline between treatments and placebo during 12-week

Crossover: Comparison of rate of change for off-treatment period (average of 8 months) to 12 weeks active treatment

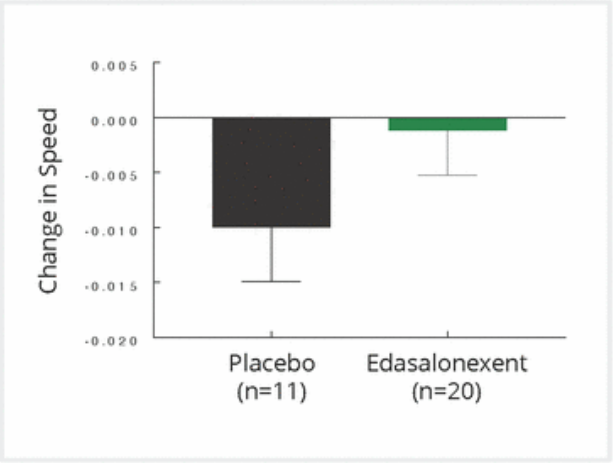
Composite Score for Phase 2 Functional Assessments
Edasalonexent Preserves Function by Slowing Rate of Decline



- **Individual scores for 4-stair climb, 10-meter walk/run, time to stand, NSAA and PODCI were pooled**
  - +1 for improvement, -1 for decline, 0 for no change
- **Post-hoc analysis: average composite scores by individual improved vs. placebo**

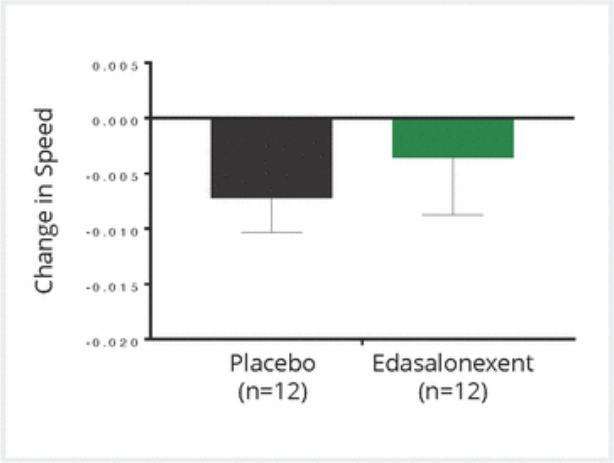
Timed Function Test: 10-meter Walk/Run Speed: Rate of Loss of Function Slowed

Placebo-Controlled



- There was a ~6% decline in function in the placebo over the 12 week trial period
- The change in 10-meter walk/run speed was improved by >80% in edasalonexent group compared to placebo

Crossover

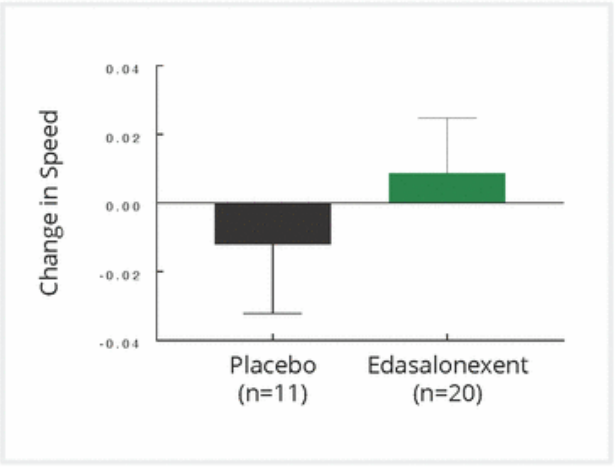


- There was a ~8% decline in function in the off treatment period
- The rate of decline in 10-meter walk/run was improved by 50% in edasalonexent crossover period vs. off-treatment period

Error bars in chart denote SEM, change in speed normalized to 12 weeks

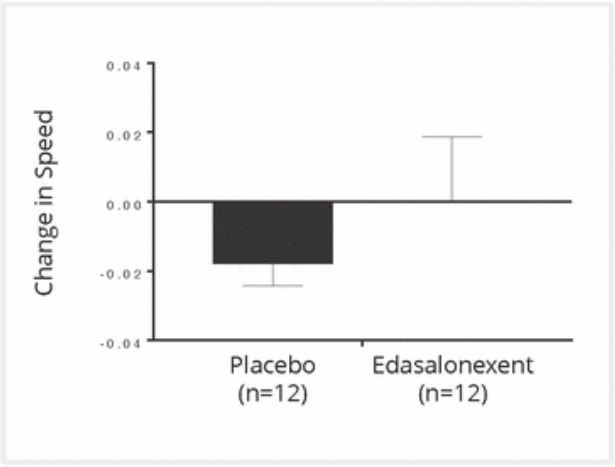
Timed Function Test: 4-stair Climb: Rate of Loss of Function Slowed to No Decline

Placebo-Controlled



- There was a ~5% decline in function in the placebo over the 12 week trial period
- The change in 4-stair climb speed was numerically better for edasalonexent than placebo

Crossover

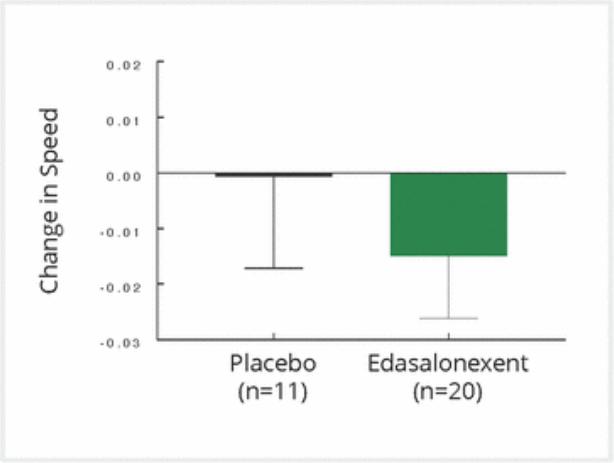


- There was a ~10% decline in function in the off treatment period
- The rate of decline in 4-stair climb increased in the off-treatment period but showed no decline in the edasalonexent crossover period

Error bars in chart denote SEM, change in speed normalized to 12 weeks

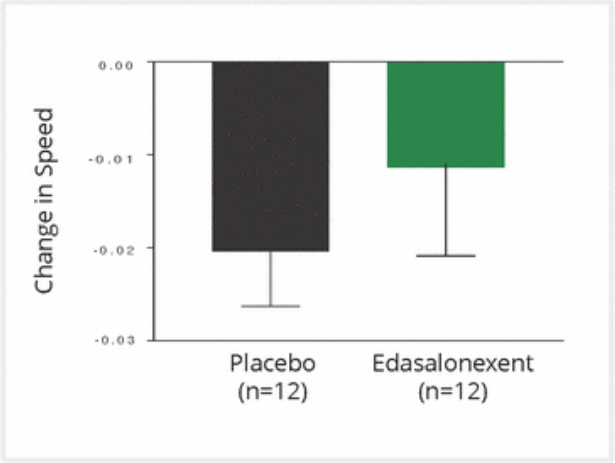
Timed Function Test: Time to Stand: Rate of Loss of Function Slowed

Placebo-Controlled



- There was a ~0.4% decline in function in the placebo over the 12 week trial period
- The change in time to stand speed was numerically worse for edasalonexent than placebo

Crossover

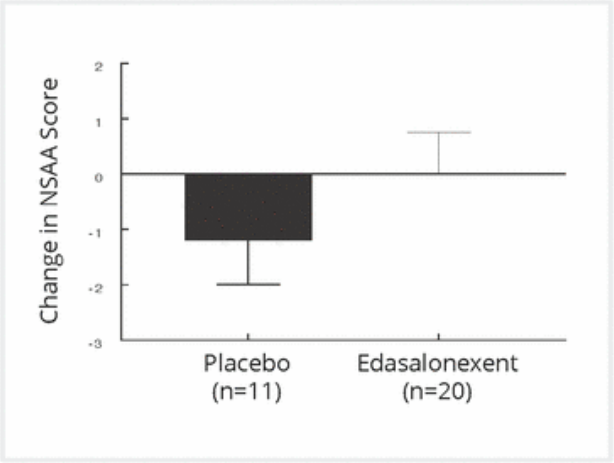


- There was a ~22% decline in function in the off treatment period
- The rate of decline in time to stand was improved by 45% in edasalonexent crossover period vs. off-treatment period

Error bars in chart denote SEM, change in speed normalized to 12 weeks

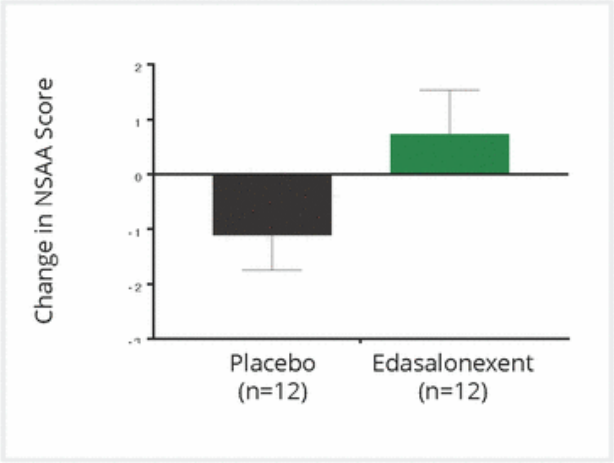
Global Functional Assessment: North Star Ambulatory Assessment: Rate of Decline in Score Slowed with Positive Improvement Seen

Placebo-Controlled



- The change in North Star Ambulatory Assessment was numerically better for edasalonexent than placebo

Crossover



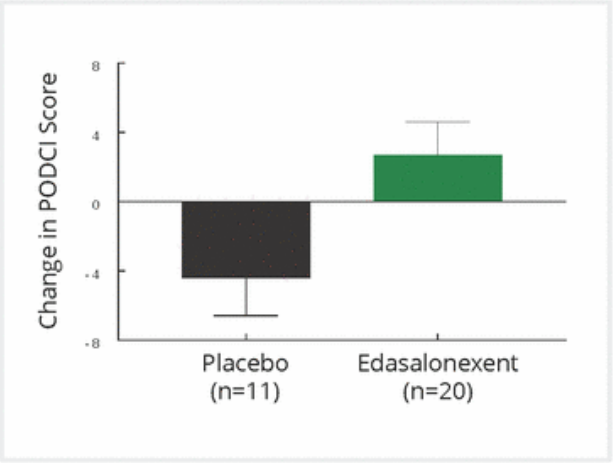
- A decline in the score in North Star Ambulatory Assessment was observed in the off-treatment period while an improvement in score was observed in the edasalonexent crossover period

North Star is a composite endpoint evaluating physical function across 17 tests with increasing difficulty

Error bars in chart denote SEM, change in score normalized to 12 weeks

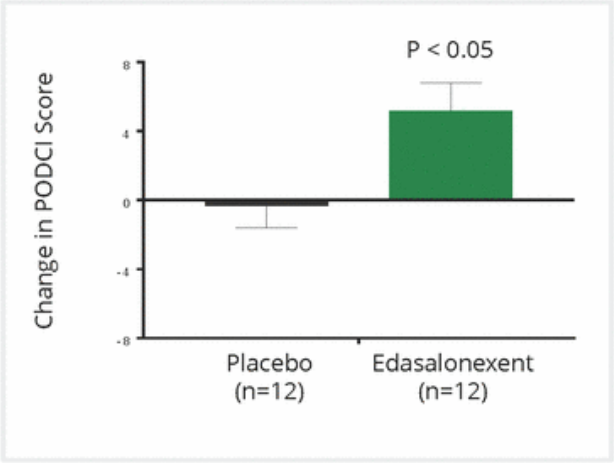
Global Functional Assessment: Pediatric Outcomes Data Collection Instrument (PODCI): Significant Improvements

Placebo-Controlled



- The change in the PODCI was numerically better for edasalonexent than placebo

Crossover



- A decline in the score in PODCI was observed in the off-treatment period while an improvement in score was observed in the edasalonexent crossover period

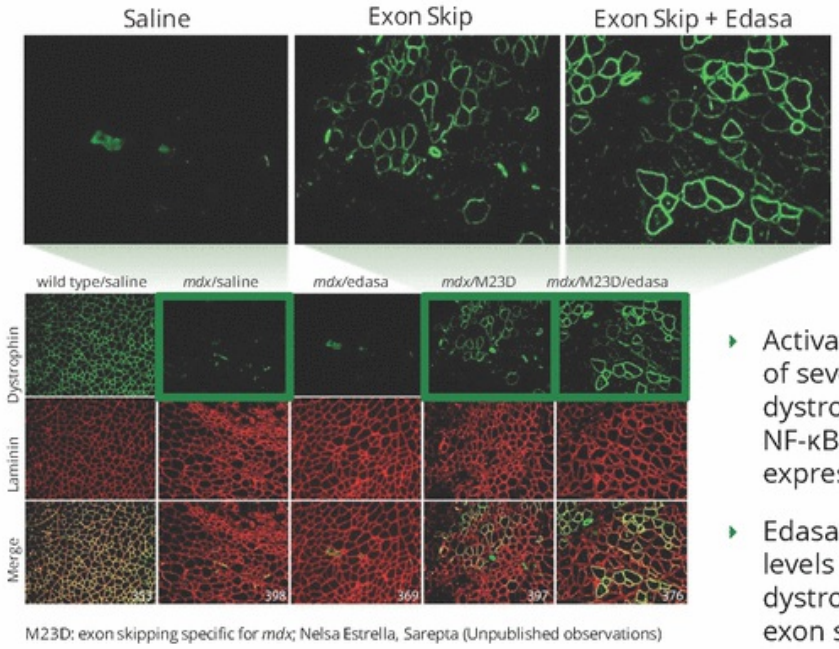
PODCI is a questionnaire for parents that asks about observations of their son's daily activities, i.e., putting on a coat, walking a block and climbing a flight of stairs. These data illustrate the Basic Mobility and Transfer Scale, which correlates with loss of functional milestones.

Error bars in chart denote SEM, change in score normalized to 12 weeks

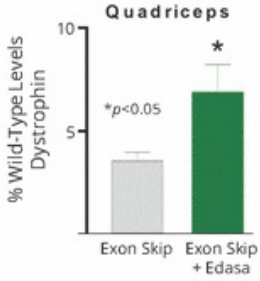
Key Takeaways from Phase 2 Data

- **Reduction in rate of functional decline in MoveDMD Phase 2**
  - Reduction in rates of decline in well established timed function tests
  - Improvements in scores on validated global functional assessments
- **No safety signals identified and well-tolerated**
- **Functional improvements observed in Phase 2 provide necessary information for Phase 3 trial design**
- **Expect results from open-label extension of MoveDMD trial in Q3 2017**
- **Expect to announce Phase 3 trial plan in H2 2017**

Edasalonexent Increases Dystrophin Expression in Combination with Exon-Skipping



M23D: exon skipping specific for *mdx*; Nelsa Estrella, Sarepta (Unpublished observations)



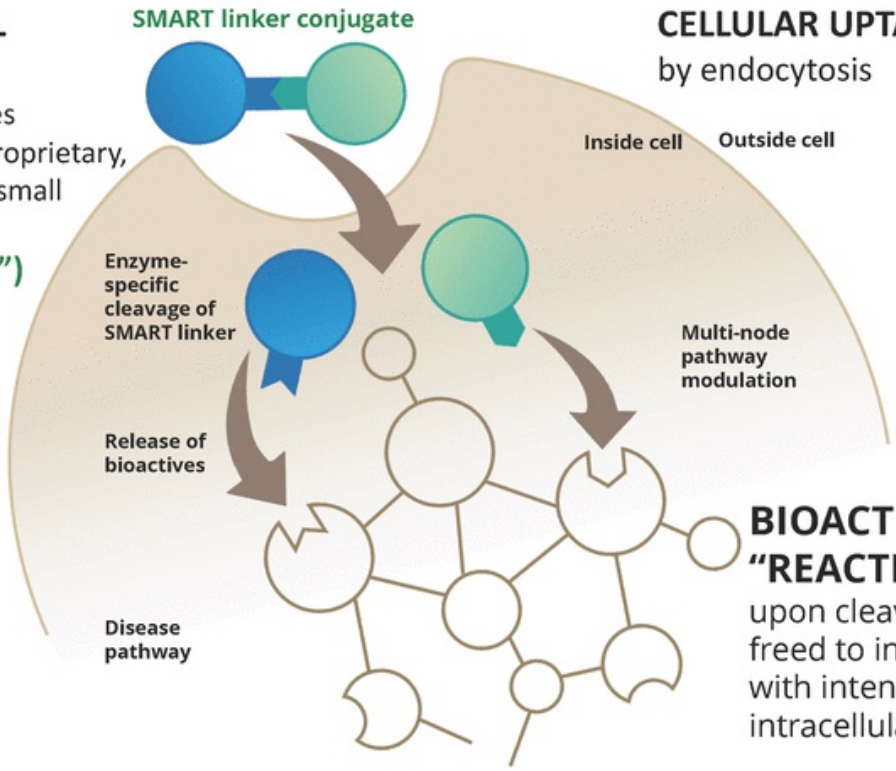
Data shown from a preclinical mouse model of DMD Sarepta and Catabasis (Unpublished observations)

- Activated NF-κB increases the expression of several microRNAs that suppress dystrophin production. Thus, inhibiting NF-κB may enhance dystrophin expression in DMD and in Becker's.
- Edasalonexent may increase dystrophin levels in patients in combination with dystrophin targeted therapies including exon skip and gene therapy

SMART Pipeline

The Intersection Of Pathway Biology and the SMART Linker Platform

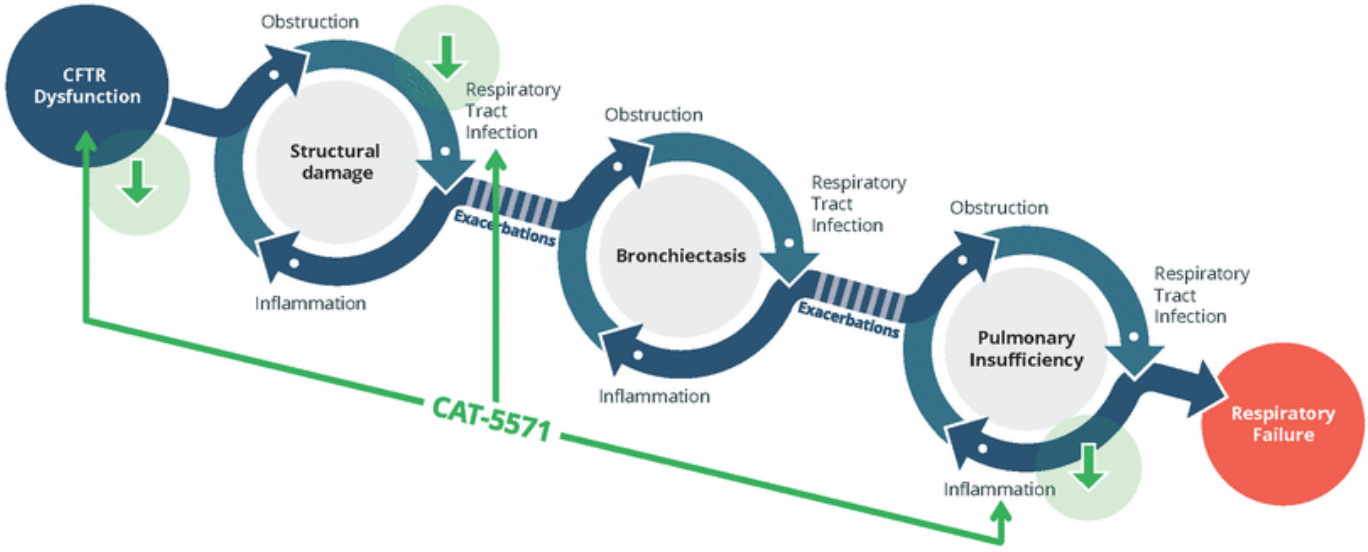
BIFUNCTIONAL CONJUGATES
of known bioactives engineered with proprietary, enzyme-cleavable small chemical linkers
("SMART linkers")



CELLULAR UPTAKE
by endocytosis

BIOACTIVES "REACTIVATED"
upon cleavage and freed to interact with intended intracellular targets

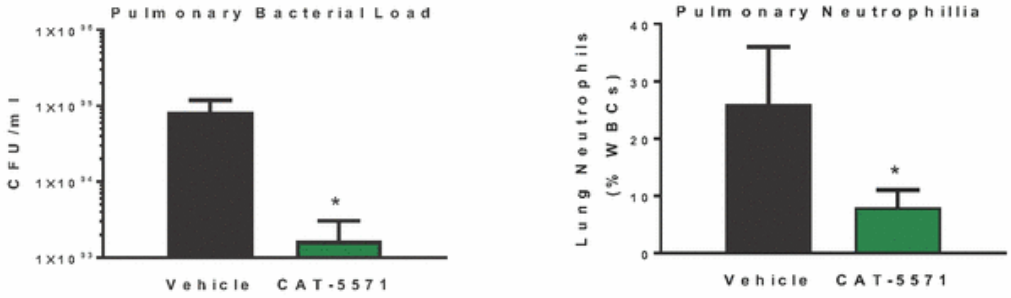
CAT-5571: Breaking the Spiral of Cystic Fibrosis Progression



- CAT-5571 is designed to address impaired autophagy and improve host defense in CF patients, strengthening their ability to clear persistent serious lung infections

CAT-5571 Reduces Pulmonary Infection and Inflammation and Increases CFTR Function in Presence of F508del CFTR

CAT-5571 reduces pulmonary *P. aeruginosa* infection and inflammation in mice with delF508 mutation



* $p < 0.05$

- CAT-5571 significantly reduces the intracellular bacterial load of *P. aeruginosa* and *B. cenocepacia*
- CAT-5571 also increases CFTR cell surface trafficking and enhances CFTR function in homozygous delF508 human bronchial epithelial cells
- CAT-5571 could play an important role in improving clinical outcomes in combination with current CF therapies

Pediatric Pulmonology. 2016 Supplement 45. 276-7.

Catabasis in 2017: Anticipated Events and Priorities

- Report results from the open-label extension of the MoveDMD trial in Q3 2017
- Announce Phase 3 trial plan for edasalonexent in DMD in H2 2017
- Continue IND-enabling activities to initiate Phase 1 trial for CAT-5571 in 2018
- Continue ongoing preclinical research for CAT-4001 in ALS and FA

catabasis

Catabasis Pharmaceuticals Corporate Update

June 19, 2017