

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**FORM S-8**

**REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

**Catabasis Pharmaceuticals, Inc.**

(Exact Name of Registrant as Specified in Its Charter)

**Delaware**  
(State or Other Jurisdiction of  
Incorporation or Organization)

**26-3687168**  
(I.R.S. Employer  
Identification No.)

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

**02139**  
(Zip Code)

**2015 Stock Incentive Plan  
2015 Employee Stock Purchase Plan**  
(Full Title of the Plan)

**Jill C. Milne, Ph.D.**  
**President and Chief Executive Officer**  
**One Kendall Square**  
**Bldg. 1400E, Suite B14202**  
**Cambridge, Massachusetts 02139**  
(Name and Address of Agent For Service)

**(617) 349-1971**  
(Telephone Number, Including Area Code, of Agent For Service)

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

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

**CALCULATION OF REGISTRATION FEE**

Title of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, \$0.001 par value per share	765,663 shares	\$ 6.43(2)	\$ 4,923,213(2)	\$ 496

- (1) In accordance with Rule 416 under the Securities Act of 1933, as amended, this registration statement shall be deemed to cover any additional securities that may from time to time be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (2) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) of the Securities Act of 1933, as amended, and based upon the average of the high and low prices of the Registrant's Common Stock as reported on The Nasdaq Global Market on March 11, 2016.

### **Statement of Incorporation by Reference**

This Registration Statement on Form S-8, relating to the 2015 Stock Incentive Plan and 2015 Employee Stock Purchase Plan of Catabasis Pharmaceuticals, Inc. (the "Registrant"), is being filed for the purpose of registering additional securities of the same class as other securities for which a Registration Statement on Form S-8 has previously been filed and is effective. Accordingly, this Registration Statement incorporates by reference the contents of the Registration Statement on Form S-8, File No. 333-206394, filed with the Securities and Exchange Commission on August 14, 2015 by the Registrant, relating to the Registrant's Amended and Restated 2008 Equity Incentive Plan, 2015 Stock Incentive Plan and 2015 Employee Stock Purchase Plan, except for Item 8, Exhibits, with respect to which the Exhibit Index immediately preceding the exhibits attached hereto is incorporated herein by reference.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Cambridge, Commonwealth of Massachusetts, on this 16<sup>th</sup> day of March, 2016.

CATABASIS PHARMACEUTICALS, INC.

By: /s/ Jill C. Milne  
Jill C. Milne, Ph.D.  
President and Chief Executive Officer

## POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Catabasis Pharmaceuticals, Inc., hereby severally constitute and appoint Jill C. Milne, Ph.D. and Ian C. Sanderson, and each of them singly, our true and lawful attorneys with full power to them, and each of them singly, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-8 filed herewith and any and all subsequent amendments to said registration statement, and generally to do all such things in our names and on our behalf in our capacities as officers and directors to enable Catabasis Pharmaceuticals, Inc. to comply with the provisions of the Securities Act of 1933, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said registration statement and any and all amendments thereto. Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jill C. Milne</u> Jill C. Milne, Ph.D.	President, Chief Executive Officer and Director (Principal executive officer)	March 16, 2016
<u>/s/ Ian C. Sanderson</u> Ian C. Sanderson	Chief Financial Officer and Treasurer (Principal financial officer)	March 16, 2016
<u>/s/ Michael Ross</u> Michael Ross, Ph.D.	Chairman of the Board of Directors	March 16, 2016
<u>/s/ Nicholas Galakatos</u> Nicholas Galakatos, Ph.D.	Director	March 16, 2016
<u>/s/ Jean George</u> Jean George	Director	March 16, 2016
<u>/s/ Ronald Laufer</u> Ronald Laufer, M.D.	Director	March 16, 2016
<u>/s/ Kenneth Bate</u> Kenneth Bate	Director	March 16, 2016

## EXHIBIT INDEX

Exhibit Number	Description of Exhibit	Incorporated by Reference			Exhibit Number	Filed Herewith
		Form	File Number	Date of Filing		
4.1	Restated Certificate of Incorporation of the Registrant	8-K	001-37467	July 1, 2015	3.1	
4.2	Amended and Restated By-Laws of the Registrant	8-K	001-37467	July 1, 2015	3.2	
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP, counsel to the Registrant					X
23.1	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)					X
23.2	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm					X
24.1	Power of attorney (included on the signature pages of this registration statement)					X
99.1	2015 Stock Incentive Plan	S-1	333-204144	June 3, 2015	10.7	
99.2	2015 Employee Stock Purchase Plan	S-1	333-204144	June 3, 2015	10.22	

WILMERHALE

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March 16, 2016

Catabasis Pharmaceuticals, Inc.  
One Kendall Square  
Bldg. 1400E, Suite B14202  
Cambridge, MA 02139

Re: Registration Statement on Form S-8: 2015 Stock Incentive Plan and 2015 Employee Stock Purchase Plan

Ladies and Gentlemen:

We have assisted in the preparation of a Registration Statement on Form S-8 (the "Registration Statement") to be filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to an aggregate of 765,663 shares of common stock, \$0.001 par value per share (the "Shares"), of Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Company"), issuable under the Company's 2015 Stock Incentive Plan and 2015 Employee Stock Purchase Plan (the "Plans").

We have examined the Certificate of Incorporation and By-Laws of the Company, each as amended and restated to date, and originals, or copies certified to our satisfaction, of all pertinent records of the meetings of the directors and stockholders of the Company, the Registration Statement and such other documents relating to the Company as we have deemed material for the purposes of this opinion.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, photostatic or other copies, the authenticity of the originals of any such documents and the legal competence of all signatories to such documents.

We assume that the appropriate action will be taken, prior to the offer and sale of the Shares in accordance with the Plans, to register and qualify the Shares for sale under all applicable state securities or "blue sky" laws.

We express no opinion herein as to the laws of any state or jurisdiction other than the state laws of the Commonwealth of Massachusetts, the General Corporation Law of the State of Delaware and the federal laws of the United States of America.

It is understood that this opinion is to be used only in connection with the offer and sale of the Shares while the Registration Statement is in effect.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters.

Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109

Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Oxford Palo Alto Washington

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Based on the foregoing, we are of the opinion that the Shares have been duly authorized for issuance and, when the Shares are issued and paid for in accordance with the terms and conditions of the applicable Plan, the Shares will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion with the Commission in connection with the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

WILMER CUTLER PICKERING  
HALE AND DORR LLP

By: /s/ Rosemary G. Reilly  
Rosemary G. Reilly, a Partner

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Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2015 Stock Incentive Plan and 2015 Employee Stock Purchase Plan of Catabasis Pharmaceuticals, Inc. of our report dated March 15, 2016, with respect to the consolidated financial statements of Catabasis Pharmaceuticals, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2015, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts  
March 16, 2016

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