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

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CATABASIS PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	2834 (Primary Standard Industrial Classification Code Number)	26-3687168 (I.R.S. Employer Identification No.)
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**One Kendall Square
Bldg. 1400E, Suite B14202
Cambridge, Massachusetts 02139
(617) 349-1971**
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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

Copies to:

Rosemary G. Reilly, Esq.
WilmerHale
60 State Street
Boston, MA 02109
Telephone: (617) 526-6000
Fax: (617) 526-5000

John D. Hogboom
Lowenstein Sandler LLP
1251 Avenue of the Americas
New York, NY 10020
Telephone: (212) 262-6700
Fax: (212) 262-7402

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

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

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. 333-225410

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth 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
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 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee
Common Units, each Common Unit consisting of one share of common stock, par value \$0.001 per share, and one warrant to purchase one share of common stock	\$7,000,000	\$872
(i) Common stock included in the Common Units(3)		
(ii) Warrants included in the Common Units(3)		
Shares of common stock underlying Warrants included in the Common Units(4)	\$8,400,000	\$1,046
Total	\$15,400,000	\$1,918

- (1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Represents only the additional number of securities being registered. Does not include the securities that the registrant previously registered on the registration statement on Form S-1 (File No. 333-225410).
- (2) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended, this registration statement shall also cover an indeterminate number of shares that may be issued and resold resulting from stock splits, stock dividends or similar transactions.
- (3) Filing fee included with the Common Units.
- (4) Pursuant to Staff Compliance and Disclosure Interpretation 240.06, equals the aggregate exercise price of the Warrants.

This Registration Statement shall become effective upon filing in accordance with Rule 462(b) under the Securities Act of 1933, as amended.

EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This registration statement is being filed with respect to the registration of additional common units (each a "Common Unit"), each Common Unit consisting of one share of common stock, \$0.001 par value per share (each a "Share") and a warrant to purchase one Share, of the Registrant, as set forth in the Registration Statement and the prospectus contained therein, of Catabasis Pharmaceuticals, Inc., a Delaware corporation, pursuant to Rule 462(b) under the Securities Act of 1933, as amended. The contents of the earlier registration statement on Form S-1 (File No. 333-225410), which was declared effective by the Commission on June 19, 2018, are incorporated in this registration statement by reference.

The required opinions and consents are listed on an Exhibit Index attached hereto and filed herewith.

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description of Exhibit</u>
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm
23.2	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)
24.1*	Power of Attorney

* Filed as Exhibit 24.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-225410) filed with the Commission on June 4, 2018.

QuickLinks

[EXPLANATORY NOTE AND INCORPORATION BY REFERENCE](#)

[EXHIBIT INDEX](#)

June 20, 2018

Catabasis Pharmaceuticals, Inc.
One Kendall Square
Building 1400E, Suite B14202
Cambridge, Massachusetts 02139

Re: Registration Statement on Form S-1

Ladies and Gentlemen:

This opinion is furnished to you in connection with the Registration Statement on Form S-1 (the "Registration Statement") filed by Catabasis Pharmaceuticals, Inc., a Delaware corporation (the "Registrant"), with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), pursuant to Rule 462(b) of the Securities Act, for the purpose of registering with the Commission under the Securities Act a proposed maximum aggregate offering price of \$15,400,000 of common units (each a "Common Unit"), each Common Unit consisting of one share of common stock, \$0.001 par value per share (each a "Share") and a warrant to purchase one Share (each a "Common Warrant" and each Share underlying a Common Warrant, a "Common Warrant Share") of the Registrant, as set forth in the Registration Statement and the prospectus contained therein. The Common Units, the Shares, the Common Warrants and the Common Warrant Shares are collectively referred to as the "Securities."

The Securities are to be sold by the Registrant pursuant to an underwriting agreement (the "Underwriting Agreement") entered into by and among the Registrant and Oppenheimer & Co. Inc., as the sole underwriter, the form of which has been incorporated by reference into the Registration Statement.

We are acting as counsel for the Registrant in connection with the issue and sale by the Registrant of the Securities. We have examined signed copies of the Registration Statement as filed with the Commission. We have also examined and relied upon the Underwriting Agreement, minutes of meetings and actions of the stockholders and the Board of Directors of the Registrant as provided to us by the Registrant, stock record books of the Registrant as provided to us by the Registrant, the Certificate of Incorporation and By-laws of the Registrant, each as restated and/or amended to date, and such other documents as we have deemed necessary for purposes of rendering the opinions hereinafter set forth.

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 copies, the authenticity of the originals of such latter documents and the legal competence of all signatories to such documents.

Our opinions set forth below are qualified to the extent that they may be subject to or affected by (i) applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance or similar laws relating to or affecting the rights of creditors generally, (ii) statutory or decisional law concerning recourse by creditors to security in the absence of notice or hearing, (iii) duties and standards imposed on creditors and parties to contracts, including,

Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109
Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Palo Alto Washington

without limitation, requirements of good faith, reasonableness and fair dealing, and (iv) general equitable principles. We express no opinion as to the availability of any equitable or specific remedy upon any breach of any of the agreements as to which we are opining herein, or any of the agreements, documents or obligations referred to therein, or to the successful assertion of any equitable defenses, inasmuch as the availability of such remedies or the success of any equitable defense may be subject to the discretion of a court.

We also express no opinion herein as to any provision of any agreement (a) which may be deemed to or construed to waive any right of the Company, (b) to the effect that rights and remedies are not exclusive, that every right or remedy is cumulative and may be exercised in addition to or with any other right or remedy and does not preclude recourse to one or more other rights or remedies, (c) relating to the effect of invalidity or unenforceability of any provision of the Common Warrants on the validity or enforceability of any other provision thereof, (d) which is in violation of public policy, including, without limitation, any provision relating to indemnification and contribution with respect to securities law matters, (e) which provides that the terms of the Common Warrants may not be waived or modified except in writing or (f) relating to choice of law or consent to jurisdiction.

We express no opinion herein as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware.

Based upon and subject to the foregoing, we are of the opinion that:

1. 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 Underwriting Agreement, the Shares will be validly issued, fully paid and non-assessable.
2. The Common Units and the Common Warrants have been duly authorized for issuance and, when the Common Units and the Common Warrants are issued and paid for in accordance with the terms and conditions of the Underwriting Agreement, the Common Units and the Common Warrants will have been duly executed and delivered by the Registrant and will constitute valid and legally binding obligations of the Company.
3. The Common Warrant Shares have been duly authorized for issuance and, when issued and paid for in accordance with the provisions of the Common Warrants, including the payment of the exercise price therefor, the Common Warrant Shares will be validly issued, fully paid and non-

assessable.

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. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related Prospectus under the caption "Legal Matters." 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

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-1 filed pursuant to Rule 462(b) of the Securities Act of 1933 of the reference to our firm under the caption "Experts" and to the incorporation by reference of our report dated March 15, 2018, 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, 2017, filed with the Securities and Exchange Commission and incorporated by reference in Amendment No. 3 to the Registration Statement (Form S-1 No. 333-225410) and related Prospectus of Catabasis Pharmaceuticals, Inc. for the registration of common units, pre-funded units and shares of common stock issuable upon exercise of warrants included in such common units and pre-funded units.

/s/ Ernst & Young LLP

Boston, Massachusetts
June 17, 2018

QuickLinks

[Exhibit 23.1](#)

[Consent of Independent Registered Public Accounting Firm](#)