

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

FORM S-8
**REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

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

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

04-3072298
(I.R.S. Employer
Identification No.)

167 Sidney Street
Cambridge, Massachusetts
(Address of Principal Executive Offices)

02139
(Zip Code)

2013 Stock Incentive Plan, as amended
(Full Title of the Plan)

Vincent J. Milano
President and Chief Executive Officer
Idera Pharmaceuticals, Inc.
167 Sidney Street
Cambridge, Massachusetts 02139
(Name and Address of Agent For Service)

(617) 679-5500
(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, 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
Non-accelerated filer
(Do not check if a smaller reporting company)

Accelerated filer
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 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	10,000,000 shares (2)	\$ 1.85(3)	\$ 18,500,000 (3)	\$ 2,145

- (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) Consists of 10,000,000 additional shares issuable under the Registrant's 2013 Stock Incentive Plan, as amended.
- (3) 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. The price per share and aggregate offering price are calculated on the basis of the average of the high and low prices of the Registrant's Common Stock as reported on the Nasdaq Capital Market on August 2, 2017.

STATEMENT OF INCORPORATION BY REFERENCE

This Registration Statement on Form S-8 is filed to register the offer and sale of an additional 10,000,000 shares of the Registrant’s common stock, \$0.001 par value per share, to be issued under the Registrant’s 2013 Stock Incentive Plan, as amended (the “2013 Plan”). In accordance with General Instruction E to Form S-8, except for Item 5 “Interests of Named Experts and Counsel” and Item 8 “Exhibits,” this Registration Statement incorporates by reference the contents of the Registration Statement on Form S-8, File No. 333-191076, filed with the Securities and Exchange Commission (the “Commission”) on September 10, 2013, the Registration Statement on Form S-8, File No. 333-197062, filed with the Commission on June 27, 2014, and the Registration Statement on Form S-8, File No. 333-206129, filed with the Commission on August 6, 2015, each relating to the 2013 Plan.

Item 5. Interests of Named Experts and Counsel.

Wilmer Cutler Pickering Hale and Dorr LLP has opined as to the legality of the securities being offered by this Registration Statement.

Item 8. Exhibits.

The Exhibit Index immediately preceding the exhibits is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 7th day of August, 2017.

IDERA PHARMACEUTICALS, INC.

By: /s/ VINCENT J. MILANO

Vincent J. Milano

President and Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Idera Pharmaceuticals, Inc., hereby severally constitute and appoint Vincent J. Milano and Louis J. Arcudi, III, 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 Idera 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, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ VINCENT J. MILANO Vincent J. Milano	President, Chief Executive Officer and Director (Principal Executive Officer)	August 7, 2017
/s/ LOUIS J. ARCUDI, III Louis J. Arcudi, III, MBA	Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	August 7, 2017
/s/ JAMES A. GERAGHTY James A. Geraghty	Chairman of the Board of Directors	August 7, 2017
Julian C. Baker	Director	
/s/ YOUSSEF EL ZEIN Youssef El Zein	Director	August 7, 2017
/s/ MARK GOLDBERG Mark Goldberg, M.D.	Director	August 7, 2017
/s/ MAXINE GOWEN Maxine Gowen, Ph.D.	Director	August 7, 2017

Signature	Title	Date
/s/ KELVIN M. NEU Kelvin M. Neu, M.D.	Director	August 7, 2017

EXHIBIT INDEX

EXHIBIT NUMBER	DESCRIPTION
4.1(1)	Specimen Certificate for shares of Common Stock, \$0.001 par value, of the Registrant
4.2(2)	Restated Certificate of Incorporation of the Registrant, as amended
4.3(3)	Amended and Restated By-laws of the Registrant
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP, counsel to the Registrant
23.1	Consent of Ernst & Young LLP
23.2	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1 filed herewith)
24.1	Power of Attorney (included on the signature page of this Registration Statement)
99.1(4)	Idera Pharmaceuticals, Inc. 2013 Stock Incentive Plan, as amended
99.2(5)	Amendment to Idera Pharmaceuticals, Inc. 2013 Stock Incentive Plan, as amended
99.3(6)	Amendment to Idera Pharmaceuticals, Inc. 2013 Stock Incentive Plan, as amended

- (1) Previously filed with the Securities and Exchange Commission as an Exhibit to the Registrant's Registration Statement on Form S-1, dated December 8, 1995 (File No. 33-99024) and incorporated herein by reference.
- (2) Previously filed with the Securities and Exchange Commission as an Exhibit to the Registrant's Quarterly Report on Form 10-Q on August 6, 2015 (File No. 001-31918) and incorporated herein by reference.
- (3) Previously filed with the Securities and Exchange Commission as an Exhibit to the Registrant's Registration Statement on Form S-1, dated November 6, 1995, as amended (File No. 33-99024), and incorporated herein by reference.
- (4) Previously filed with the Securities and Exchange Commission as an Exhibit to the Registrant's Current Report on Form 8-K, dated June 13, 2014 (File No. 001-31918) and incorporated herein by reference.
- (5) Previously filed with the Securities and Exchange Commission as an Exhibit to the Registrant's Current Report on Form 8-K, dated June 11, 2015 (File No. 001-31918) and incorporated herein by reference.
- (6) Previously filed with the Securities and Exchange Commission as an Exhibit to the Registrant's Current Report on Form 8-K, dated June 9, 2017 (File No. 001-31918) and incorporated herein by reference.

August 7, 2017

WILMERHALE

Stuart M. Falber

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Idera Pharmaceuticals, Inc.
167 Sidney Street
Cambridge, Massachusetts 02139

Re: 2013 Stock Incentive Plan, as amended

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 10,000,000 shares of common stock, \$0.001 par value per share (the "Shares"), of Idera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), issuable under the Company's 2013 Stock Incentive Plan, as amended (the "Plan").

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 Plan, 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.

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 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/ Stuart M. Falber
Stuart M. Falber, Partner

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2013 Stock Incentive Plan, as amended, of Idera Pharmaceuticals, Inc. of our reports dated March 15, 2017, with respect to the financial statements of Idera Pharmaceuticals, Inc. and the effectiveness of internal control over financial reporting of Idera Pharmaceuticals, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2016, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts
August 7, 2017
