

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549**

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**FORM 8-K**

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

**Date of Report (Date of earliest event reported): April 23, 2013**

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

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

**001-31918**  
(Commission  
File Number)

**04-3072298**  
(IRS Employer  
Identification No.)

**167 Sidney Street**  
**Cambridge, Massachusetts**  
(Address of principal executive offices)

**02139**  
(Zip Code)

**Registrant's telephone number, including area code: (617) 679-5500**

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

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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))

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**Item 1.01 Entry Into a Material Definitive Agreement***Pillar Agreement*

On April 22, 2013, Idera Pharmaceuticals, Inc. (the “Company”) entered into an agreement (the “Agreement”) with Pillar Pharmaceuticals I, L.P. (“Pillar I”) and Pillar Pharmaceuticals II, L.P. (together with Pillar I, the “Pillar Entities”). Under the Agreement, Pillar I has irrevocably agreed to waive and not exercise the rights, powers, preferences and other terms of the Series D Convertible Preferred Stock (the “Series D Preferred Stock”) under Section 6 of the Certificate of Designations, Preferences and Rights of Series D Preferred Stock (the “Series D Certificate of Designations”), including without limitation the right to require the Company to purchase all or any portion of the shares of the Company’s Series D Preferred Stock at a price equal to the original Series D Preferred Stock purchase price per share plus all accrued or declared but unpaid dividends thereon upon the occurrence of specified fundamental changes such as mergers, consolidations, business combinations, stock purchases or similar transactions resulting in a person or group unaffiliated with any holder of the Series D Preferred Stock owning 66.67% or more of the outstanding voting securities of the Company or successor entity.

Under the Agreement, the Company and the Pillar Entities have agreed, among other things:

- to an amendment to the Series D Certificate of Designations for the Series D Preferred Stock that would:
  - the dividend provisions of the Series D Certificate of Designations to change the date after which the Company may elect to pay dividends in shares of its common stock from December 31, 2014 to October 1, 2013, and to allow for the payment of such dividends in shares of a to-be-created new series of non-voting preferred stock in the event that payment of such dividends may not be made in shares of its common stock as a result of the application of the beneficial ownership and voting power limitations set forth the Series D Certificate of Designations; and
  - in connection with the waiver of the right to require the Company to purchase the Series D Preferred Stock upon the occurrence of specified fundamental changes, to modify the Series D Certificate of Designations to provide, in the event of a sale of the Company, for the distribution of any assets that remain available for distribution to the Company’s stockholders, after payment to the holders of the Company’s Series A Convertible Preferred Stock and any other class of the Company’s capital stock that ranks senior to the Series D Preferred Stock, to the holders of the Series D Preferred Stock on a pro rata basis with the holders of the Company’s common stock, Series E Convertible Preferred Stock (the “Series E Preferred Stock”) and such new series of non-voting preferred stock; and
- to an amendment to the Certificate of Designations, Preferences and Rights of Series E Preferred Stock (the “Series E Certificate of Designations”), that would:
  - modify the dividend provisions of the Series E Certificate of Designations to allow for the payment of dividends in shares of the Company’s common stock commencing October 1, 2013; and
  - allow for the payment of dividends in shares of a to-be-created new series of non-voting preferred stock in the event that payment of such dividends may not be made in shares of the Company’s common stock as a result of the application of the beneficial ownership and voting power limitations set forth in the Series E Certificate of Designations.

In addition, the Company has agreed to seek approval from its stockholders at the 2013 annual meeting of stockholders of amendments to the Series D Certificate of Designations and

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Series E Certificate of Designations to effect these changes to the dividend provisions of the Series D Preferred Stock and Series E Preferred Stock, the redemption rights of the holders of the Series D Preferred Stock and the rights of the holders of the Series D Preferred Stock to distributions in the event of a sale of the Company. Each Pillar Entity has agreed:

- to vote, and to cause its affiliates to vote, all shares of the Company's voting stock held by such Pillar Entity or its affiliates, and over which such Pillar Entity or its affiliates has the power to vote, in favor of such amendments; and
- not to, and to cause its affiliates not to, sell or transfer any shares of Common Stock, Series D Preferred Stock or Series E Preferred Stock held by such Pillar Entity or its affiliates to any person, entity or group unless such proposed transferee agrees in a written instrument executed by such transferee, the applicable Pillar Entity and the Company to take and hold such securities subject to, among other things, the Agreement and to be bound by the terms of the Agreement, including the waiver of rights, voting agreements and restrictions on transfer set forth therein.

Under the Agreement, in consideration of the agreements of the Pillar Entities under the Agreement and the delivery of the waiver by Pillar I, and for no additional cash consideration, the Company has agreed to issue to Pillar I warrants (the "Pillar I Warrants"), to purchase up to 1,000,000 shares of the Company's common stock. The Pillar I Warrants will have an exercise price per share equal to the greater of (a) \$0.61 and (b) to the extent that warrants to purchase shares of the Company's common stock are issued in a qualified financing, the per share exercise price of the warrants issued in such qualified financing. The Pillar I Warrants are exercisable immediately, and will expire if not exercised on or prior to the fifth anniversary from the date of issuance. The Pillar I Warrants provide that, after the second anniversary of the date of issuance, the Company may redeem the Pillar I Warrants for \$0.01 per share of common stock issuable on exercise of the Pillar I Warrants following notice to the holder thereof if the closing price of the Company's common stock for 20 or more trading days in a period of 30 consecutive trading days is greater than or equal to \$2.80 per share.

The Agreement will become effective upon the consummation of a qualified financing (the "Effective Date"). The Agreement will terminate in the event that a qualified financing is not consummated by June 1, 2013. Under the terms of the Agreement, a qualified financing is defined as the issuance and sale of the Company's equity securities from and after the date of the Agreement in one or more closings resulting in aggregate proceeds to the Company of at least \$12.5 million.

The Agreement is attached hereto as Exhibit 10.1 and incorporated herein by reference. The form of Warrant to be issued to the Pillar Entities is attached to the Agreement and is incorporated herein by reference. The foregoing descriptions of the Agreement and the Pillar I Warrants do not purport to be complete and is qualified in its entirety by reference to such exhibits.

#### *Registration Rights Agreement*

In addition, upon the Effective Date, the Company will enter into a Registration Rights Agreement with Pillar I (the "Registration Rights Agreement"). Pursuant to the Registration Rights Agreement, the Company will agree to file a registration statement with the Securities and Exchange Commission regarding the resale of the shares of Common Stock issuable upon exercise of the Pillar I Warrants. The Company will be subject to specified cash penalties if it fails to file and maintain an effective registration statement. Such penalties are limited to a cumulative maximum penalty equal to 10% of the aggregate exercise price of the Pillar I Warrants then held by Pillar I which are not able to be sold pursuant to a registration statement. The Company will be required to use its reasonable best efforts to maintain the registration statement's effectiveness until no shares of Common Stock issued or issuable upon exercise of the Pillar I Warrants remain outstanding or issuable, as applicable.

The form of Registration Rights Agreement is attached to the Agreement and is incorporated herein by reference. The foregoing description of the Registration Rights Agreement does not purport to be complete and is qualified in its entirety by reference to such exhibit.

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**Item 9.01. Financial Statements and Exhibits.**

(d) Exhibits

See Exhibit Index attached hereto.

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**SIGNATURE**

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.

**Idera Pharmaceuticals, Inc.**

Date: April 23, 2013

By: \_\_\_\_\_ /s/ Louis J. Arcudi, III

Louis J. Arcudi, III  
*Chief Financial Officer,  
Treasurer and Secretary*

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**EXHIBIT INDEX**

<u>Exhibit No.</u>	<u>Description</u>
10.1	Agreement, dated April 22, 2013, among the Company and the Pillar Entities

## AGREEMENT

This Agreement (this “AGREEMENT”) is entered into as of April 22, 2013 by and among Idera Pharmaceuticals, Inc., a Delaware corporation (the “COMPANY”), Pillar Pharmaceuticals I, L.P. (“PILLAR I”), and Pillar Pharmaceuticals II, L.P. (“PILLAR II” and, together with Pillar I, the “PILLAR ENTITIES”). The parties hereby agree as follows:

### ARTICLE 1

#### WARRANTS AND COMPANY DELIVERABLES

1.1 Authorization. The Company has duly authorized the issuance to Pillar I, at the Effective Time (as defined in Section 1.2 below) and pursuant to the terms and conditions hereof, warrants to purchase 1,000,000 shares of its common stock, par value \$0.001 per share (the “COMMON STOCK”), in the form attached hereto as Exhibit A (the “WARRANTS”).

1.1 Issuance of Warrants; Exercise Price. Upon the Effective Time, the Company will issue the Warrants to Pillar I in consideration of the agreements of and waivers of rights by the Pillar Entities hereunder and for no additional cash consideration. The Warrants shall be exercisable for shares of Common Stock at an exercise price per share equal to the greater of (a) \$0.61 (the closing price of the Common Stock on the trading day immediately prior to the date hereof (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock)) and (b) to the extent that warrants to purchase shares of Common Stock are issued in the Qualified Financing, the per share exercise price of the warrants issued in such Qualified Financing. As used in this Agreement, the term “QUALIFIED FINANCING” means the issuance and sale of equity securities of the Company (which, for the avoidance of doubt, shall be equity securities which the Company’s independent public accountants shall consider to be stockholders’ equity on the Company’s balance sheet and not debt) from and after the date hereof in one or more closings resulting in aggregate gross proceeds to the Company of at least \$12.5 million, and the term “EFFECTIVE TIME” means the time and date upon which the Qualified Financing is consummated. For the avoidance of doubt, “gross proceeds” refers to the aggregate purchase price of the equity securities issued and sold in the Qualified Financing prior to any deduction of underwriting discounts, selling commissions and other costs and expenses incurred in connection therewith.

1.2 Company Deliverables. Upon the Effective Time, the Company shall execute and deliver to Pillar I (a) copies the Warrants (with the original Warrants delivered to Pillar I within three business days following the Effective Time) and (b) a Registration Rights Agreement in the form attached hereto as Exhibit B (the “REGISTRATION RIGHTS AGREEMENT”), each dated as of the Effective Time. The Registration Rights Agreement shall become effective upon the due execution thereof by Pillar I.

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## ARTICLE 2

### ADDITIONAL AGREEMENTS AND WAIVERS

2.1 Waiver of Right to Fundamental Change Redemptions. Effective from and after the Effective Time and until the Amendments (as defined in Section 2.2(b)) have been approved by the stockholders of the Company and filed by the Company with, and accepted by, the Delaware Secretary of State, Pillar I hereby irrevocably waives (and irrevocably agrees not to exercise) the rights, powers, preferences and other terms of the Company's Series D Convertible Preferred Stock, par value \$0.01 per share (the "SERIES D PREFERRED STOCK") under Section 6 of the Certificate of Designations, Preferences and Rights of Series D Preferred Stock, as amended from time to time (the "SERIES D CERTIFICATE OF DESIGNATIONS"), including without limitation the right to require the Company to purchase all or any portion of such shares of Series D Preferred Stock, at a price equal to the Redemption Price (as defined in the Series D Certificate of Designations) upon the occurrence of a Fundamental Change (as defined in the Series D Certificate of Designations). In connection with this Section 2.1, and in accordance with Section 8 of the Series D Certificate of Designations, simultaneously upon the execution of this Agreement Pillar I, in its capacity as the holder of 100% of the issued and outstanding shares of Series D Preferred Stock, has delivered to the Company an irrevocable waiver of the rights, powers, preferences and other terms of the Series D Preferred Stock granted pursuant to and as set forth in Section 6 of the Series D Certificate of Designations.

#### 2.2 Proxy Statement.

(A) Effective from and after the Effective Time, the Company shall use its best efforts to file a preliminary proxy statement with the Securities and Exchange Commission with respect to its next annual meeting of stockholders that will, among other things, seek stockholder approval of the Amendments (as defined in Section 2.2(B)) and include a recommendation of the Company's Board of Directors (the "BOARD") that the stockholders of the Company approve such Amendments (unless the Board determines in good faith, that its fiduciary duties require it to do otherwise). In order to be approved at a meeting of the stockholders of the Company: (I) the Amendment described in clause (i) of Section 2.2(B) shall require (a) the affirmative vote of the holders of a majority of the combined voting power of the outstanding shares of Common Stock and Series D Preferred Stock, voting as a single class, calculated on an as converted to Common Stock basis, present or represented in person or by proxy and voting at the meeting and (b) the affirmative vote of the holders of a majority of the outstanding shares of the Series D Preferred Stock, voting separately as a series; and (II) the Amendment described in clause (ii) of Section 2.2(B) shall require (a) the affirmative vote of the holders of a majority of the combined voting power of the outstanding shares of Common Stock and Series D Preferred Stock, voting as a single class, calculated on an as converted to Common Stock basis, present or represented in person or by proxy and voting at the meeting and (b) the affirmative vote of the holders of a majority of the outstanding shares of the Company's Series E Convertible Preferred Stock, par value \$0.01 per share, of the Company (the "SERIES E PREFERRED STOCK"), voting separately as a series.



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(B) As used in this Agreement, the term “AMENDMENTS” shall mean: (i) an amendment to the Series D Certificate of Designations in the form attached hereto as Exhibit C (provided, however, that the Company shall not, and shall have no obligation to, submit the matters contemplated by this clause (i) to the stockholders of the Company if there are no shares of Series D Preferred Stock then outstanding); and (ii) an amendment to the Certificate of Designations, Preferences and Rights of Series E Preferred Stock (the “SERIES E CERTIFICATE OF DESIGNATIONS”) in the form attached hereto as Exhibit D (provided, however, that the Company shall not, and shall have no obligation to, submit the matters contemplated by this clause (ii) to the stockholders of the Company if there are no shares of Series E Preferred Stock then outstanding).

### 2.3 Voting Agreements.

(A) Effective from and after the Effective Time, each Pillar Entity hereby (i) agrees to vote, and to cause its affiliates to vote, all shares of the Company’s voting stock held by such Pillar Entity (or its affiliates) (and over which such Pillar Entity (or its affiliates) has the power to vote) in favor of the resolutions set forth in the forms of Amendments attached hereto and (ii) constitutes and appoints as the proxies of the party and hereby grants a power of attorney to the officers of the Company, and each of them, with full power of substitution, with respect to the matters set forth in clause (i) of this Section 2.3(A), and hereby authorizes each of them to represent and to vote, if and only if such Pillar Entity (a) fails to vote or (b) attempts to vote (whether by proxy, in person or by written consent), in a manner which is inconsistent with the terms of clause (i) of this Section 2.3(A), all shares of voting stock held by such Pillar Entity and its affiliates in accordance with the terms of clause (i) of this Section 2.3(A), or to take any action necessary to effect clause (i) of this Section 2.3(A). The parties acknowledge and agree that (1) the voting agreements set forth in this Section 2.3(A) are in addition to, and not in lieu of, the prior voting agreements entered into by each Pillar Entity and the Company and (2) the Company will cause the proxies identified in such prior voting agreement to vote any Excess Shares (as defined in such prior voting agreement) in favor of the resolutions set forth in the forms of Amendments attached hereto.

(B) Each of the proxy and power of attorney granted pursuant to Section 2.3(A) is given in consideration of the issuance of the Warrants to Pillar I and the agreements and covenants of the Company and the parties in connection with the matters and transactions contemplated by this Agreement and, as such, each is coupled with an interest and shall be irrevocable unless and until this Agreement terminates or expires or the Amendments have been approved by the stockholders of the Company and filed by the Company with, and accepted by, the Delaware Secretary of State.

2.4 Restrictions on Transfer. Notwithstanding anything to the contrary set forth in this Agreement, without the prior written consent of the Company, the Pillar Entities shall not, and shall cause their respective affiliates to not, sell or transfer any shares of Common Stock, Series D Preferred Stock or Series E Preferred Stock, held by such Pillar Entity (or its affiliates) to any person, entity or group unless such proposed transferee agrees in a written instrument executed by such transferee, the applicable Pillar Entity and the Company to take and hold such securities subject to, among other things, this Agreement and to be bound by the terms of this Agreement, including the waiver of rights, voting agreements and restrictions on transfer set forth in Section 2.1, Section 2.3 and this Section 2.4, respectively.

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2.5 Return of Stock Certificates: Re-Legending.

(A) Each Pillar Entity agrees that it shall deliver (and shall cause its affiliates to deliver) to the Company, in each case within three business days following the Effective Time, each certificate held by such Pillar Entity (or its affiliate) that represents shares of Common Stock, Series D Preferred Stock or Series E Preferred Stock for endorsement by the Company with the following legend (in addition to any other legends that such certificate then bears):

“THE SHARES EVIDENCED HEREBY ARE SUBJECT TO AN AGREEMENT BETWEEN THE COMPANY AND THE HOLDER OF SUCH SHARES, AS MAY BE AMENDED FROM TIME TO TIME (A COPY OF WHICH MAY BE OBTAINED UPON WRITTEN REQUEST FROM THE COMPANY) WHICH PROVIDES FOR, AMONG OTHER THINGS, CERTAIN VOTING AGREEMENTS, WAIVERS OF RIGHTS AND RESTRICTIONS ON TRANSFER, AND (I) MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF THAT AGREEMENT AND (II) BY ACCEPTING ANY INTEREST IN SUCH SHARES THE PERSON ACCEPTING SUCH INTEREST SHALL BE DEEMED TO AGREE TO AND SHALL BECOME BOUND BY ALL THE PROVISIONS OF THAT AGREEMENT, INCLUDING THE VOTING AGREEMENTS, WAIVERS OF RIGHTS AND RESTRICTIONS ON TRANSFER SET FORTH THEREIN.”

(B) The Company, by its execution of this Agreement, agrees that it will cause any certificates delivered to it pursuant to Section 2.5(A) and any certificates evidencing shares of Common Stock, Series D Preferred Stock or Series E Preferred Stock issued after the date hereof upon exercise or conversion of any securities of the Company held by the Pillar Entities to bear the legend required by this Section 2.5, and it shall supply, free of charge, a copy of this Agreement to any holder of a certificate evidencing such shares upon written request from such holder to the Company at its principal office. The parties to this Agreement do hereby agree that the failure to cause the certificates evidencing any shares of Common Stock, Series D Preferred Stock or Series E Preferred Stock to bear the legend required by this Section 2.5 and/or the failure of the Company to supply, free of charge, a copy of this Agreement as provided hereunder shall not affect the validity or enforcement of the waivers of rights, voting agreements, restrictions on transfer or other terms set forth in this Agreement.

(C) The legend required pursuant to Section 2.5(A) shall be removed from the certificates representing such shares of Common Stock, Series D Preferred Stock and Series E Preferred Stock at the request of the holder thereof, at such time as the Amendments have been approved by the stockholders of the Company and filed by the Company with, and accepted by, the Delaware Secretary of State.

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2.6 Reservation of Common Stock. From and after the Effective Time, the Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of providing for the exercise of the Warrants, such number of shares of Common Stock as shall from time to time equal 100% of the number of shares sufficient to permit the exercise of the Warrants issued pursuant to this Agreement in accordance with their terms, without regard to any exercise limitations contained therein.

2.7 Expenses. Notwithstanding anything to the contrary set forth in this Agreement, all fees and expenses incurred in connection with this Agreement and the matters and transactions contemplated hereby shall be paid by the party incurring such fees and expenses, whether or not such matters or transactions are consummated.

### ARTICLE 3

#### MISCELLANEOUS

3.1 Notices. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (i) upon delivery to the party to be notified, (ii) when received by email or confirmed facsimile, or (iii) one business day after deposit with a nationally recognized overnight carrier, specifying next business day delivery, with written verification of receipt. All communications shall be sent to the Company and the Pillar Entities as follows or at such other addresses as the Company or either Pillar Entity may designate upon 10 days' advance written notice to the other party:

(A) if to the Company, to:

Idera Pharmaceuticals, Inc.  
167 Sidney Street  
Cambridge, MA 02139  
Attention: Chief Executive Officer  
Facsimile: (617) 679-5592  
Email: sagrawal@iderapharma.com

with a copy to:

Wilmer Cutler Pickering Hale and Dorr LLP  
60 State Street  
Boston, Massachusetts 02109  
Attention: Stuart Falber  
Facsimile: (617) 526-5000  
Email: stuart.falber@wilmerhale.com

(B) if to a Pillar Entity, to such Pillar Entity's address as set forth on its respective signature page hereto.

3.2 Changes. This Agreement may not be modified or amended except pursuant to an instrument in writing signed by the Company and either Pillar Entity (and any such modification or amendment so signed shall be binding on both Pillar Entities). No provision hereunder may be waived other than in a written instrument executed by the waiving party.

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3.3 Headings. The headings of the various sections of this Agreement have been inserted for convenience of reference only and shall not be deemed to be part of this Agreement.

3.4 Severability. In case any provision contained in this Agreement should be invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.

3.5 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware without regard to principles of conflicts of law.

3.6 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall constitute an original, but all of which, when taken together, shall constitute but one instrument, and shall become effective when one or more counterparts have been signed by each party hereto and delivered (including by facsimile) to the other parties.

3.7 Entire Agreement; Termination. This Agreement, the Registration Rights Agreement, the Warrants and the instruments referenced herein contain the entire understanding of the parties with respect to the matters covered herein and therein and, except as specifically set forth herein or therein, neither the Company nor any Pillar Entity makes any representation, warranty, covenant or undertaking with respect to such matters. This Agreement shall terminate and be of no further force and effect at 5:00 p.m. on June 1, 2013 to the extent that a Qualified Financing has not been consummated prior to such time and date.

3.8 Assignment. Except as otherwise expressly provided herein, the provisions hereof shall inure to the benefit of, and be binding upon, the parties hereto and their respective permitted successors, assigns, heirs, executors and administrators. This Agreement and the rights of the Pillar Entities hereunder may not be assigned by any Pillar Entity without the prior written consent of the Company, except such consent shall not be required in cases of (a) assignments by a Pillar Entity as permitted under Section 2.4 (provided, that such assignee agrees in writing to be bound by the terms of this Agreement) and (b) assignments of the Warrants by a Pillar Entity as permitted under the terms of the Warrants (provided, that such assignee agrees in writing to be bound by the terms of the Warrants).

3.9 Further Assurances. Each party agrees to cooperate fully with the other parties and to execute such further instruments, documents and agreements and to give such further written assurance as may be reasonably requested by any other party to evidence and reflect the transactions described herein and contemplated hereby and to carry into effect the intents and purposes of this Agreement.

3.10 Transfers in Violation of this Agreement; Specific Performance. Any transfer not made in compliance with the requirements of this Agreement shall be null and void ab initio, shall not be recorded on the books of the Company or its transfer agent and shall not be recognized by the Company. Each Pillar Entity acknowledges and agrees that any breach of this Agreement by a Pillar Entity would result in substantial harm to the Company and its stockholders for which monetary damages alone could not adequately compensate. Therefore, each Pillar Entity unconditionally and irrevocably agrees that the Company shall be entitled to

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seek and obtain protective orders, injunctive relief and other remedies available at law or in equity (including without limitation, seeking specific performance or the rescission of purchases, sales and other transfers of the Warrants or shares of Common Stock, Series D Preferred Stock or Series E Preferred Stock not made in compliance with this Agreement).

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IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first set forth above.

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal

Sudhir Agrawal

Chairman, Chief Executive Officer and President

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IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first set forth above.

PILLAR PHARMACEUTICALS I, L.P.

By: Pillar Invest Corporation, its General Partner

By: /s/ Youssef El Zein

Name: Youssef El Zein

Title: General Partner

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IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first set forth above.

PILLAR PHARMACEUTICALS II, L.P.

By: Pillar Invest Corporation, its General Partner

By: /s/ Youssef El Zein

Name: Youssef El Zein

Title: General Partner



**THIS WARRANT AND THE SHARES OF COMMON STOCK ISSUED UPON  
ITS EXERCISE ARE SUBJECT TO THE RESTRICTIONS ON  
TRANSFER SET FORTH IN SECTION 5 OF THIS WARRANT**

Warrant No. [•]

Number of Shares: 1,000,000  
(subject to adjustment)

Original Issue Date: [•], 2013

Common Stock Purchase Warrant

(Void after [•], 2018)

Idera Pharmaceuticals, Inc., a Delaware corporation (the “Company”), for value received, hereby certifies that Pillar Pharmaceuticals I, L.P., or its registered assigns (the “Registered Holder”), is entitled, subject to the terms and conditions set forth below, to purchase from the Company, at any time or from time to time on or after the date of issuance and on or before 5:00 p.m. (Boston time) on [•], 2018, 1,000,000 shares of Common Stock, \$0.001 par value per share, of the Company (“Common Stock”), at a purchase price of \$[•]<sup>1</sup> per share. The shares purchasable upon exercise of this Warrant, and the purchase price per share, each as adjusted from time to time pursuant to the provisions of this Warrant, are hereinafter referred to as the “Warrant Shares” and the “Purchase Price,” respectively.

1. Exercise.

(a) Exercise for Cash. The Registered Holder may, at its option, elect to exercise this Warrant, in whole or in part and at any time or from time to time, by surrendering this Warrant, with the purchase form appended hereto as Exhibit I duly executed by or on behalf of the Registered Holder, at the principal office of the Company, or at such other office or agency as the Company may designate, accompanied by payment in full, in lawful money of the United States, of the Purchase Price payable in respect of the number of Warrant Shares purchased upon such exercise.

(b) Cashless Exercise.

(i) During such periods as there is not an effective registration statement under the Securities Act of 1933, as amended (the “Securities Act”), registering, and no current prospectus available for, the resale by the Registered Holder of any Warrant Shares (except to the extent due to any actions or inactions of the Registered Holders under the Registration Rights Agreement dated as of [•], 2013 by and among the Company and the Purchaser (as defined therein)), the Registered Holder may, at its option, elect to exercise this

<sup>1</sup> NTD: A per share amount equal to the greater of (a) \$0.61 (the closing price of the Common Stock on the trading day immediately prior to the date hereof (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock)) and (b) to the extent that warrants to purchase shares of Common Stock are issued in the Qualified Financing, the per share exercise price of the warrants issued in such Qualified Financing.

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Warrant, in whole or in part, on a cashless basis, by surrendering this Warrant, with the purchase form appended hereto as Exhibit I duly executed by or on behalf of the Registered Holder, at the principal office of the Company, or at such other office or agency as the Company may designate, by canceling a portion of this Warrant in payment of the Purchase Price payable in respect of the number of Warrant Shares purchased upon such exercise. In the event of an exercise pursuant to this subsection 1(b), the number of Warrant Shares issued to the Registered Holder shall be determined according to the following formula:

$$X = \frac{Y(A-B)}{A}$$

Where: X = the number of Warrant Shares that shall be issued to the Registered Holder;

Y = the number of Warrant Shares for which this Warrant is being exercised (which shall include both the number of Warrant Shares issued to the Registered Holder and the number of Warrant Shares subject to the portion of the Warrant being cancelled in payment of the Purchase Price);

A = the Fair Market Value (as defined below) of one share of Common Stock; and

B = the Purchase Price then in effect.

(ii) The Fair Market Value per share of Common Stock shall be determined as follows:

(A) If the Common Stock is listed on a national securities exchange, or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the average of the high and low reported sale prices per share of Common Stock thereon on the trading day immediately preceding the Exercise Date ( provided that if no such price is reported on such day, the Fair Market Value per share of Common Stock shall be determined pursuant to clause (B)).

(B) If the Common Stock is not listed on a national securities exchange or another nationally recognized trading system as of the Exercise Date, the Fair Market Value per share of Common Stock shall be deemed to be the amount most recently determined by the Board of Directors of the Company (the "Board") to represent the fair market value per share of the Common Stock (including without limitation a determination for purposes of granting Common Stock options or issuing Common Stock under any plan, agreement or arrangement with employees of the Company); and, upon request of the Registered Holder, the Board (or a representative thereof) shall, as promptly as reasonably practicable but in any event not later than 10 days after such request, notify the Registered Holder of the Fair Market Value per share of Common Stock and furnish the Registered Holder with reasonable documentation of the Board's determination of such Fair Market Value. Notwithstanding the foregoing, if the Board has not made such a determination within the three-month period prior to the Exercise

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Date, then (A) the Board shall make, and shall provide or cause to be provided to the Registered Holder notice of, a determination of the Fair Market Value per share of the Common Stock within 15 days of a request by the Registered Holder that it do so, and (B) the exercise of this Warrant pursuant to this subsection 1(b) shall be delayed until such determination is made and notice thereof is provided to the Registered Holder.

(c) Exercise Date. Each exercise of this Warrant shall be deemed to have been effected immediately prior to the close of business on the day on which this Warrant shall have been surrendered to the Company as provided in subsection 1(a) or 1(b) above (the "Exercise Date"). At such time, the person or persons in whose name or names any certificates for Warrant Shares shall be issuable upon such exercise as provided in subsection 1(d) below shall be deemed to have become the holder or holders of record of the Warrant Shares represented by such certificates.

(d) Issuance of Certificates. The Company, at its expense, shall use its best efforts, as soon as practicable after the exercise of this Warrant in whole or in part, and in any event within three (3) business days thereafter, to cause to be issued in the name of, and delivered to, the Registered Holder, or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct:

(i) a certificate or certificates for the number of full Warrant Shares to which the Registered Holder shall be entitled upon such exercise plus, in lieu of any fractional share to which the Registered Holder would otherwise be entitled, cash in an amount determined pursuant to Section 3 hereof; and

(ii) in case such exercise is in part only, a new Warrant or Warrants (dated the date hereof) of like tenor, calling in the aggregate on the face or faces thereof for the number of Warrant Shares equal (without giving effect to any adjustment therein) to the number of such shares called for on the face of this Warrant minus the number of Warrant Shares for which this Warrant was so exercised (which, in the case of an exercise pursuant to subsection 1(b), shall include both the number of Warrant Shares issued to the Registered Holder pursuant to such partial exercise and the number of Warrant Shares subject to the portion of the Warrant being cancelled in payment of the Purchase Price).

(e) Exercise Limitation. Notwithstanding anything to the contrary contained herein, the Company shall not effect any exercise of this Warrant and the Registered Holder shall not be entitled to exercise this Warrant for a number of Warrant Shares in excess of that number of Warrant Shares which, upon giving effect to such exercise, would cause (i) the aggregate number of shares of Common Stock beneficially owned by the Registered Holder and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the Registered Holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), to exceed 19.99% of the total number of issued and outstanding shares of Common Stock of the Company following such exercise, or (ii) the combined voting power of the securities of the Company beneficially owned by the Registered Holder and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act to exceed 19.99% of the combined voting power of all of the securities of the

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Company then outstanding following such exercise, unless, in either case, the stockholders of the Company approve the Nasdaq Proposal (as defined by and in accordance with Section 5.11(B) of that certain Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, among the Company, Pillar Pharmaceuticals II, L.P. and the other parties thereto [(the "Series E Purchase Agreement")]), in which case, the 19.99% limitation under clause (i) and clause (ii) of this Section 1(e) shall be increased, with respect to the Registered Holder, to 35% for purposes of both clause (i) and clause (ii) of this Section 1(e). For purposes of this Section 1(e), the aggregate number of shares of Common Stock or voting securities beneficially owned by the Registered Holder and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the Registered Holder's for purposes of Section 13(d) of the Exchange Act shall include the shares of Common Stock issuable upon the exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (x) exercise of the remaining unexercised and non-cancelled portion of this Warrant by the Registered Holder and (y) exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the Company that do not have voting power (including without limitation any securities of the Company which would entitle the holder thereof to acquire at any time Common Stock, including without limitation any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock), subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Registered Holder or any of its affiliates and other persons whose beneficial ownership of Common Stock would be aggregated with the Registered Holder's for purposes of Section 13(d) of the Exchange Act.

## 2. Adjustments.

(a) Adjustment for Stock Splits and Combinations. If the Company shall at any time or from time to time after the Original Issue Date effect a subdivision of the outstanding Common Stock, the Purchase Price then in effect immediately before that subdivision shall be proportionately decreased. If the Company shall at any time or from time to time after the Original Issue Date combine the outstanding shares of Common Stock, the Purchase Price then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision or combination becomes effective.

(b) Adjustment for Certain Dividends and Distributions. In the event the Company at any time, or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Purchase Price then in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Purchase Price then in effect by a fraction:

(A) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

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(B) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution;

provided, however, that if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Purchase Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Purchase Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends or distributions.

(c) Adjustment in Number of Warrant Shares. When any adjustment is required to be made in the Purchase Price pursuant to subsections 2(a) or 2(b), the number of Warrant Shares purchasable upon the exercise of this Warrant shall be changed to the number determined by dividing (i) an amount equal to the number of shares issuable upon the exercise of this Warrant immediately prior to such adjustment, multiplied by the Purchase Price in effect immediately prior to such adjustment, by (ii) the Purchase Price in effect immediately after such adjustment.

(d) Adjustments for Other Dividends and Distributions. In the event the Company at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Company (other than shares of Common Stock) or in cash or other property (other than regular cash dividends paid out of earnings or earned surplus, determined in accordance with generally accepted accounting principles), then and in each such event provision shall be made so that the Registered Holder shall receive upon exercise hereof, in addition to the number of shares of Common Stock issuable hereunder, the kind and amount of securities of the Company, cash or other property which the Registered Holder would have been entitled to receive had this Warrant been exercised on the date of such event and had the Registered Holder thereafter, during the period from the date of such event to and including the Exercise Date, retained any such securities receivable during such period, giving application to all adjustments called for during such period under this Section 2 with respect to the rights of the Registered Holder.

(e) Adjustment for Reorganization. If there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Company in which the Common Stock is converted into or exchanged for securities, cash or other property (other than a transaction covered by subsections 2(a), 2(b) or 2(d)) (collectively, a "Reorganization"), then, following such Reorganization, the Registered Holder shall receive upon exercise hereof the kind and amount of securities, cash or other property which the Registered Holder would have been entitled to receive pursuant to such Reorganization if such exercise had taken place immediately prior to such Reorganization. In any such case, appropriate adjustment (as determined in good faith by the Board) shall be made in the application of the provisions set forth herein with respect to the rights and interests thereafter of the Registered Holder, to the end that the provisions set forth in this Section 2 (including provisions with respect to changes in and other adjustments of the Purchase Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities, cash or other property thereafter deliverable upon the exercise of this Warrant.

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(f) Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Purchase Price pursuant to this Section 2, the Company at its expense shall, as promptly as reasonably practicable but in any event not later than ten (10) days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to the Registered Holder a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property for which this Warrant shall be exercisable and the Purchase Price) and showing in detail the facts upon which such adjustment or readjustment is based. The Company shall, as promptly as reasonably practicable after the written request at any time of the Registered Holder (but in any event not later than ten (10) days thereafter), furnish or cause to be furnished to the Registered Holder a certificate setting forth (i) the Purchase Price then in effect and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the exercise of this Warrant.

3. Fractional Shares. The Company shall not be required upon the exercise of this Warrant to issue any fractional shares, but shall pay the value thereof to the Registered Holder in cash on the basis of the Fair Market Value per share of Common Stock, as determined pursuant to subsection 1(b)(ii) above.

4. Redemption of Warrants.

(a) At any time after [•], 2015, subject to the terms of this Section 4, the Company shall have the right to redeem all or a portion of this Warrant for a redemption price (the "Redemption Price") equal to the result obtained by multiplying (i) \$0.01 by (ii) the number of Warrant Shares that the Registered Holder is entitled to purchase upon exercise of all or the portion of this Warrant that is being redeemed (such Redemption Price being subject to adjustment for stock splits, stock dividends, combinations, recapitalizations, reclassifications, and similar transactions affecting the Common Stock).

(b) The Company shall exercise this redemption right by providing at least 30 days' prior written notice to the Registered Holder of such redemption (the "Redemption Notice"). Such Redemption Notice shall be provided to the Registered Holder in accordance with Section 19 of this Warrant. The Redemption Notice shall specify the time, manner and place of redemption, including without limitation the date on which this Warrant shall be redeemed (the "Redemption Date") and the Redemption Price payable to the Registered Holder (assuming that this Warrant is not exercised on or prior to the Redemption Date).

(c) Notwithstanding the foregoing, the Company may not redeem this Warrant or provide the Redemption Notice to the Registered Holder (i) unless the closing sales price of the Common Stock for twenty (20) or more trading days in a period of thirty (30) consecutive trading days ending within thirty (30) days prior to the date the Company provides the Redemption Notice to the Registered Holder is greater than or equal to \$2.80 (subject to adjustment for stock splits, stock dividends, combinations, recapitalizations, reclassifications, and similar transactions affecting the Common Stock) and (ii) with respect to any portion of this Warrant which may not be exercised by the Registered Holder as of the time of the Redemption Notice under Section 1(e).

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(d) This Warrant shall cease to be exercisable and shall be terminated and of no further force or effect effective at 5:00 p.m. (Boston time) on the Redemption Date. If the Registered Holder does not exercise this Warrant on or prior to the Redemption Date, the Registered Holder shall surrender this Warrant to the Company on the Redemption Date for cancellation. From and after the Redemption Date, the Registered Holder's sole right hereunder shall be to receive the Redemption Price, without interest, upon presentation and surrender of this Warrant for cancellation.

(e) Notwithstanding anything to the contrary set forth in this Section 4, no redemptions may be effected by the Company pursuant to this Section 4 unless and until such redemption has been approved by a majority in number of the directors of the Company that are not affiliated with any holder of the Company's Series E Convertible Preferred Stock, par value \$0.01 per share (the "Series E Preferred Stock") or the warrants issued pursuant to the Series E Purchase Agreement and were not elected as a director of the Corporation as a result of being nominated or submitted for consideration by any holder of the Series E Preferred Stock, or any affiliate thereof.

#### 5. Transfers, etc.

(a) The Warrants shall not be sold, transferred, assigned or hypothecated unless (i) there is an effective registration statement under the Securities Act covering such Warrants, (ii) the sale is made in accordance with Rule 144 under the Securities Act, or (iii) the Company receives an opinion of counsel for the holder of the Warrants reasonably satisfactory to the Company stating that such sale, transfer, assignment or hypothecation is exempt from the registration requirements of the Securities Act, and each such case upon all other conditions specified in this Section 5(a). Notwithstanding the provisions of the preceding sentence, no registration statement or opinion of counsel shall be required for any transfer of any Warrants by a holder thereof that is a partnership, a limited liability company or a corporation to (A) a partner of such partnership, a member of such limited liability company or a stockholder of such corporation, (B) an entity that controls, or is controlled by, or is under common control with such partnership, limited liability company or corporation, or (C) the estate of any such partner, member or stockholder (collectively, clauses (A) through (C) the "Permitted Transferees"); provided, that in each of the foregoing cases the proposed transferee of the Warrants agrees in writing to take and hold such Warrants subject to the provisions and upon the conditions specified in this Section 5.

(b) Each certificate representing Warrant Shares shall be stamped or otherwise imprinted with the following legends in substantially the following forms:

"THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES OR IN ANY OTHER JURISDICTION."

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“THE SECURITIES REPRESENTED HEREBY MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER APPLICABLE SECURITIES LAWS UNLESS OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THOSE LAWS.”

“THE SECURITIES REPRESENTED BY THIS CERTIFICATE MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.”

The foregoing legend (other than the last legend) shall be removed from the certificates representing such Warrant Shares, at the request of the holder thereof, at such time as (i) a period of at least one year, as determined in accordance with paragraph (d) of Rule 144 under the Act, has elapsed since the later of the date the Warrant Shares were acquired from the Company or an affiliate of the Company, and (ii) the Warrant Shares become eligible for resale pursuant to Rule 144(b)(1)(i) under the Securities Act.

(c) The Company will maintain a register containing the name and address of the Registered Holder of this Warrant. The Registered Holder may change its address as shown on the warrant register by written notice to the Company requesting such change.

(d) Subject to the provisions of Section 5 hereof, this Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant with a properly executed assignment (in the form of Exhibit II hereto) at the principal office of the Company (or, if another office or agency has been designated by the Company for such purpose, then at such other office or agency).

(e) This Warrant and the Warrant Shares shall be subject to the restrictions on transfer set forth in Section 6.1 of that certain Convertible Preferred Stock and Warrant Purchase Agreement, dated November 4, 2011, as amended, between the Company and Pillar Pharmaceuticals I, L.P.

6. Notices of Record Date, etc. In the event:

(a) the Company shall take a record of the holders of its Common Stock (or other stock or securities at the time deliverable upon the exercise of this Warrant) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of stock of any class or any other securities, or to receive any other right; or

(b) of any capital reorganization of the Company, any reclassification of the Common Stock of the Company, any consolidation or merger of the Company with or into another corporation (other than a consolidation or merger in which the Company is the surviving entity and its Common Stock is not converted into or exchanged for any other securities or property), or any transfer of all or substantially all of the assets of the Company; or



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(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then, and in each such case, the Company will send or cause to be sent to the Registered Holder a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other stock or securities at the time deliverable upon the exercise of this Warrant) shall be entitled to exchange their shares of Common Stock (or such other stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up. Such notice shall be sent at least ten (10) days prior to the record date or effective date for the event specified in such notice.

7. Reservation of Stock. The Company will at all times reserve and keep available, solely for issuance and delivery upon the exercise of this Warrant, such number of Warrant Shares and other securities, cash and/or property, as from time to time shall be issuable upon the exercise of this Warrant.

8. Exchange or Replacement of Warrants.

(a) Upon the surrender by the Registered Holder, properly endorsed, to the Company at the principal office of the Company, the Company will, subject to the provisions of Section 5 hereof, issue and deliver to or upon the order of the Registered Holder, at the Company's expense, a new Warrant or Warrants of like tenor, in the name of the Registered Holder or as the Registered Holder (upon payment by the Registered Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock (or other securities, cash and/or property) then issuable upon exercise of this Warrant.

(b) Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and (in the case of loss, theft or destruction) upon delivery of an indemnity agreement (with surety if reasonably required) in an amount reasonably satisfactory to the Company, or (in the case of mutilation) upon surrender and cancellation of this Warrant, the Company will issue, in lieu thereof, a new Warrant of like tenor.

9. Notices. All notices and other communications from the Company to the Registered Holder in connection herewith shall be mailed by certified or registered mail, postage prepaid, sent by email or confirmed facsimile or sent via a reputable nationwide overnight courier service guaranteeing next business day delivery, to the address last furnished to the Company in writing by the Registered Holder. All notices and other communications from the Registered Holder to the Company in connection herewith shall be mailed by certified or registered mail, postage prepaid, sent by email or confirmed facsimile or sent via a reputable

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nationwide overnight courier service guaranteeing next business day delivery, to the Company at its principal office set forth below. If the Company should at any time change the location of its principal office to a place other than as set forth below, it shall give prompt written notice to the Registered Holder and thereafter all references in this Warrant to the location of its principal office at the particular time shall be as so specified in such notice. All such notices and communications shall be deemed delivered (i) two (2) business days after being sent by certified or registered mail, return receipt requested, postage prepaid, (ii) upon receipt of email or confirmed facsimile or (iii) one (1) business day after being sent via a reputable nationwide overnight courier service guaranteeing next business day delivery.

Notices and other communications from the Registered Holder to the Company shall be sent to:

Idera Pharmaceuticals, Inc.  
167 Sidney Street  
Cambridge, MA 02139  
Attention: Chief Executive Officer  
Facsimile: (617) 679-5592  
Email: sagrawal@iderapharma.com

with a copy to:

Wilmer Cutler Pickering Hale and Dorr LLP  
60 State Street  
Boston, Massachusetts 02109  
Attention: Stuart Falber  
Facsimile: (617) 526-5000  
Email: stuart.falber@wilmerhale.com

10. No Rights as Stockholder. Until the exercise of this Warrant, the Registered Holder shall not have or exercise any rights by virtue hereof as a stockholder of the Company. Notwithstanding the foregoing, in the event (i) the Company effects a split of the Common Stock by means of a stock dividend and the Purchase Price of and the number of Warrant Shares are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), and (ii) the Registered Holder exercises this Warrant between the record date and the distribution date for such stock dividend, the Registered Holder shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

11. Amendment or Waiver. Any term of this Warrant may be amended or waived only by an instrument in writing signed by the party against which enforcement of the change or waiver is sought. No waivers of any term, condition or provision of this Warrant, in any one or more instances, shall be deemed to be, or construed as, a further or continuing waiver of any such term, condition or provision.

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12. Section Headings. The section headings in this Warrant are for the convenience of the parties and in no way alter, modify, amend, limit or restrict the contractual obligations of the parties.

13. Governing Law. This Warrant will be governed by and construed in accordance with the internal laws of the State of Delaware (without reference to the conflicts of law provisions thereof).

14. Facsimile Signatures. This Warrant may be executed by facsimile signature.

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EXECUTED as of the Date of Issuance indicated above.

Idera Pharmaceuticals, Inc.

By: \_\_\_\_\_

Title: \_\_\_\_\_

PURCHASE FORM

To:

Dated:

The undersigned, pursuant to the provisions set forth in the attached Warrant (No. \_\_\_\_\_), hereby elects to purchase *(check applicable box)*:

- \_\_\_\_\_ shares of the Common Stock of Idera Pharmaceuticals, Inc. covered by such Warrant; or
- the maximum number of shares of Common Stock covered by such Warrant pursuant to the cashless exercise procedure set forth in subsection 1(b).

The undersigned herewith makes payment of the full purchase price for such shares at the price per share provided for in such Warrant. Such payment takes the form of *(check applicable box or boxes)*:

- \$ \_\_\_\_\_ in lawful money of the United States; and/or
- the cancellation of such portion of the attached Warrant as is exercisable for a total of \_\_\_\_\_ Warrant Shares (using a Fair Market Value of \$ \_\_\_\_\_ per share for purposes of this calculation) ; and/or
- the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 1(b), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 1(b).

Signature: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

ASSIGNMENT FORM

FOR VALUE RECEIVED, \_\_\_\_\_ hereby sells, assigns and transfers all of the rights of the undersigned under the attached Warrant (No. \_\_\_\_\_ ) with respect to the number of shares of Common Stock of Idera Pharmaceuticals, Inc. covered thereby set forth below, unto:

Name of Assignee \_\_\_\_\_ Address \_\_\_\_\_ No. of Shares \_\_\_\_\_

Dated: \_\_\_\_\_ Signature: \_\_\_\_\_

Signature Guaranteed:

By: \_\_\_\_\_

The signature should be guaranteed by an eligible guarantor institution (banks, stockbrokers, savings and loan associations and credit unions with membership in an approved signature guarantee medallion program) pursuant to Rule 17Ad-15 under the Securities Exchange Act of 1934.

**IDERA PHARMACEUTICALS, INC.**  
**REGISTRATION RIGHTS AGREEMENT**

REGISTRATION RIGHTS AGREEMENT (this "AGREEMENT"), dated as of April 22, 2013, by and among IDERA PHARMACEUTICALS, INC., a corporation organized under the laws of the State of Delaware (the "COMPANY"), and each of the persons or entities listed on Exhibit A hereto (the "PURCHASERS").

WHEREAS:

In connection with that certain Agreement, dated as of even date herewith, by and among the Company, the Purchasers and the other parties thereto (the "PILLAR AGREEMENT"), the Company has agreed, upon the terms and subject to the conditions contained therein, to issue to the Purchaser warrants (the "WARRANTS") to acquire shares of the Company's common stock, par value \$0.001 per share (the "COMMON STOCK"). The shares of Common Stock issuable upon exercise of or otherwise pursuant to the Warrants are referred to herein as the "WARRANT SHARES."

To induce the Purchasers to execute and deliver the Pillar Agreement, the Company has agreed to provide certain registration rights under the Securities Act of 1933, as amended, and the rules and regulations thereunder, or any similar successor statute (collectively, the "SECURITIES ACT"), and applicable state securities laws.

NOW, THEREFORE, in consideration of the premises and the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the Purchasers hereby agree as follows:

1. DEFINITIONS.

A. As used in this Agreement, the following terms shall have the following meanings:

i. "PURCHASERS" means the Purchasers and any transferees or assignees who agree to become bound by the provisions of this Agreement in accordance with Section 10 hereof.

ii. "REGISTER," "REGISTERED," and "REGISTRATION" refer to a registration effected by preparing and filing a Registration Statement or Statements in compliance with the Securities Act and pursuant to Rule 415 under the Securities Act or any successor rule providing for offering securities on a continuous basis ("RULE 415"), and the declaration or ordering of effectiveness of such Registration Statement by the United States Securities and Exchange Commission (the "SEC").

iii. "REGISTRABLE SECURITIES" means (a) the Warrant Shares and (b) any shares of capital stock issued or issuable, from time to time (with any adjustments), in respect of the Warrant Shares by virtue of any stock split, stock dividend, recapitalization or similar event; provided, however, that shares of Common Stock that are Registrable Securities

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shall cease to be Registrable Securities upon the earliest of (A) the date such shares become eligible for sale pursuant to Rule 144(b)(1)(i) under the Securities Act; provided that a period of at least one year, as determined in accordance with paragraph (d) of Rule 144 under the Securities Act, has elapsed since the later of the date such shares were acquired from the Company or an affiliate of the Company, (B) the date that such shares are sold (I) pursuant to a registration statement, (II) to or through a broker, dealer or underwriter in a public securities transaction and/or (III) in a transaction exempt from the registration and prospectus delivery requirements of the Securities Act such that all transfer restrictions and restrictive legends with respect thereto, if any, are removed upon the consummation of such sale, or (C) any sale or transfer to any person or entity which by virtue of Section 10 of this Agreement is not entitled to the rights provided by this Agreement. Wherever reference is made in this Agreement to a request or consent of holders of a certain percentage of Registrable Securities, the determination of such percentage shall include shares of Common Stock issuable upon exercise of the Warrants, even if such exercise has not been effected.

iv. "REGISTRATION STATEMENT" means a registration statement of the Company under the Securities Act (including without limitation the Initial Registration Statement, the New Registration Statement and any Remainder Registration Statements, each, as defined below).

v. "SEC GUIDANCE" means (i) any publicly-available written or oral guidance, comments, requirements or requests of the SEC staff (ii) any written or oral guidance, requirements or requests by the SEC staff to the Company and (iii) the Securities Act.

B. Capitalized terms used herein and not otherwise defined herein shall have the respective meanings set forth in the Pillar Agreement.

## 2. REGISTRATION.

### A. MANDATORY REGISTRATION.

i. The Company shall file with the SEC and use its reasonable best efforts to cause to become effective a Registration Statement on Form S-3 (or, if Form S-3 is not then available, on such form of Registration Statement as is then available to effect a registration of all of the Registrable Securities) covering the resale of the Registrable Securities on or prior to the 90<sup>th</sup> day following the date of this Agreement (the "INITIAL REGISTRATION STATEMENT"). The Initial Registration Statement filed hereunder, to the extent allowable under the Securities Act, shall state that such Initial Registration Statement also covers such indeterminate number of additional shares of Common Stock as may become issuable upon exercise of the Warrants to prevent dilution resulting from stock splits, stock dividends or similar transactions.

ii. Notwithstanding the registration obligations set forth in this Section 2, in the event the SEC informs the Company that all of the Registrable Securities cannot, as a result of the application of Rule 415, be registered for resale as a secondary offering on a single registration statement, the Company shall promptly inform each of the Purchasers and use its commercially reasonable efforts to (a) file amendments to the Initial Registration Statement as



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required by the SEC and/or (b) withdraw the Initial Registration Statement and file a new registration statement (a "NEW REGISTRATION STATEMENT"), in either case covering the maximum number of Registrable Securities permitted to be registered by the SEC, on Form S-3 or such other form available to register for resale the Registrable Securities as a secondary offering; *provided, however*, that prior to filing such amendment or New Registration Statement, the Company shall be obligated to use its commercially reasonable efforts to advocate with the SEC for the registration of all of the Registrable Securities in accordance with the SEC Guidance, including without limitation, Compliance and Disclosure Interpretation 612.09 of the rules adopted under the Securities Act.

iii. Notwithstanding any other provision of this Agreement, if any SEC Guidance sets forth a limitation on the number of Registrable Securities permitted to be registered on a particular Registration Statement as a secondary offering (and notwithstanding that the Company used commercially reasonable efforts to advocate with the SEC for the registration of all or a greater number of Registrable Securities), unless otherwise directed in writing by a holder as to its Registrable Securities, the number of Registrable Securities to be registered on such Registration Statement will first be reduced by (a) Registrable Securities not acquired pursuant to the Pillar Agreement (whether pursuant to registration rights or otherwise) and (b) second by Registrable Securities that are Warrant Shares (applied, in the case that some Warrant Shares may be registered, to the holders on a pro rata basis based on the total number of unregistered Warrant Shares held by such holders).

iv. In the event the Company amends the Initial Registration Statement or files a New Registration Statement, as the case may be, under clause ii. above, the Company will use its commercially reasonable efforts to file with the SEC, as promptly as allowed by the SEC or the SEC Guidance provided to the Company or to registrants of securities in general, one or more registration statements on Form S-3 or such other form available to register for resale those Registrable Securities that were not registered for resale on the Initial Registration Statement, as amended, or the New Registration Statement (the "REMAINDER REGISTRATION STATEMENTS").

#### B. PAYMENTS BY THE COMPANY.

i. If the Initial Registration Statement or the New Registration Statement, as the case may be, is not declared effective by the SEC on or before [•], 2013 (the "REGISTRATION DEADLINE") or, (ii) if, after a Registration Statement has been declared effective by the SEC, sales of any of the Registrable Securities covered by such Registration Statement cannot be made pursuant to such Registration Statement because such Registration Statement has been suspended (by reason of a stop order or the Company's failure to update the Registration Statement or otherwise) except as a result of a permitted Suspension under Section 9, then the Company will make payments to the Purchasers in such amounts and at such times as shall be determined pursuant to this Section 2(B), as liquidated damages and not as a penalty for such delay in or reduction of their ability to sell the Registrable Securities (which remedy shall constitute the Purchasers exclusive monetary remedy). In such event, the Company shall pay to each Purchaser an amount equal to the product of (i) the aggregate exercise price of the Warrants then held by such Purchaser which are not able to be sold pursuant to a Registration Statement for such reasons (the "AGGREGATE WARRANT PRICE"), multiplied by (ii) one hundredths

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(.01), for each thirty (30) day period, (A) after the Registration Deadline and prior to the date the Initial Registration Statement or the New Registration Statement, as the case may be, is declared effective by the SEC, and (B) during which sales of any Registrable Securities covered by a Registration Statement cannot be made pursuant to any such Registration Statement after the Registration Statement has been declared effective; provided, however, that there shall be excluded from each such period any delays which are attributable to changes (other than corrections of Company mistakes with respect to information previously provided by the Purchasers) required by the Purchasers in the Registration Statement with respect to information relating to the Purchasers, including, without limitation, changes to the plan of distribution. Such amounts shall be paid in cash within five (5) trading days after the end of each thirty (30) day period that gives rise to such obligation.

ii. Notwithstanding the foregoing, in no event shall the Company be obligated to make payments hereunder (a) to more than one Purchaser in respect of the same Registrable Securities for the same period of time or (b) to any one Purchaser in an aggregate amount that exceeds 10% of the Aggregate Warrant Price of the Warrants then held by such Purchaser. All liquidated damages hereunder shall apply on a daily pro-rata basis for any portion of a 30-day period prior to the cure of any of the events specified in (A) or (B) of this Section 2(B).

iii. The Company shall not be liable for liquidated damages under this Agreement as to any Registrable Securities which are not permitted by the SEC to be included in the Initial Registration Statement or the New Registration Statement due solely to SEC Guidance relating to the inclusion of such Registrable Securities in a Registration Statement from the time that it is determined that such Registrable Securities are not permitted to be registered. In such case, the liquidated damages shall be calculated to only apply to the Registrable Securities which are permitted in accordance with SEC Guidance relating to the inclusion of such Registrable Securities in a Registration Statement to be included in such Initial Registration Statement or such New Registration Statement.

### 3. OBLIGATIONS OF THE COMPANY.

In connection with the registration of the Registrable Securities, the Company shall have the following obligations:

A. The Company shall prepare and file with the SEC such amendments (including post-effective amendments) and supplements to each Registration Statement and the prospectus used in connection with each Registration Statement as may be necessary to keep each such Registration Statement effective pursuant to Rule 415 at all times until no Registrable Securities thereunder remain outstanding (the "REGISTRATION PERIOD"), and, during such period, comply with the provisions of the Securities Act in order to enable the disposition of all Registrable Securities of the Company covered by the Registration Statement until such time as all of such Registrable Securities have been disposed of in accordance with the intended methods of disposition by the seller or sellers thereof as set forth in the Registration Statement.

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B. In connection with the effectiveness of each Registration Statement, the Company shall furnish to each Purchaser whose Registrable Securities are included in the Registration Statement within three trading days of the date of effectiveness of the Registration Statement or any amendment thereto, a notice stating that the Registration Statement or amendment has been declared effective; and such number of copies of a prospectus, including a preliminary prospectus, and all amendments and supplements thereto and such other documents as such Purchaser may reasonably request in order to facilitate the disposition of the Registrable Securities owned by such Purchaser.

C. The Company shall use its reasonable best efforts to (i) register and qualify the Registrable Securities covered by Registration Statements under such other securities or “blue sky” laws of such jurisdictions in the United States as each Purchaser who holds Registrable Securities being offered reasonably requests, (ii) prepare and file in those jurisdictions such amendments (including post-effective amendments) and supplements to such registrations and qualifications as may be necessary to maintain the effectiveness thereof during the Registration Period, (iii) take such other actions as may be necessary to maintain such registrations and qualifications in effect at all times during the Registration Period, and (iv) take all other actions reasonably necessary or advisable to qualify the Registrable Securities for sale in such jurisdictions; provided, however, that the Company shall not be required in connection therewith or as a condition thereto to (a) qualify to do business in any jurisdiction where it would not otherwise be required to qualify but for this Section 3(C), (b) subject itself to general taxation in any such jurisdiction, (c) file a general consent to service of process in any such jurisdiction, (d) provide any undertakings that cause the Company undue expense or burden, or (e) make any change in its charter or by-laws, which in each case the Board of Directors of the Company determines to be contrary to the best interests of the Company and its stockholders.

D. The Company shall notify each Purchaser who holds Registrable Securities of the time when a supplement to any prospectus forming a part of a Registration Statement has been filed and of any request by the SEC for the amending or supplementing of such Registration Statement or prospectus. If the Company has delivered a Prospectus and after having done so the prospectus is amended to comply with the requirements of the Securities Act, the Company shall promptly notify each Purchaser who holds Registrable Securities covered by such prospectus and, if requested, such Purchasers shall immediately cease making offers of Registrable Securities pursuant to such prospectus and return all copies of such prospectus to the Company. The Company shall promptly provide the Purchasers with revised prospectuses and, following receipt of the revised prospectuses, the Purchasers shall be free to resume making offers of the Registrable Securities.

E. The Company shall provide a transfer agent and registrar, which may be a single entity, for the Registrable Securities not later than the effective date of the Initial Registration Statement or the New Registration Statement, as applicable.

F. The Company shall cooperate with the Purchasers who hold Registrable Securities to facilitate the timely preparation and delivery of certificates representing Registrable Securities to be offered pursuant to the Registration Statements and enable such certificates to be in such denominations or amounts, as the case may be, as Purchasers may reasonably request and registered in such names as the Purchasers may request.

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G. At the reasonable request of the Purchasers holding a majority in interest of the Registrable Securities covered by a Registration Statement, the Company shall prepare and file with the SEC such amendments (including post effective amendments) and supplements to such Registration Statement and the prospectus used in connection with such Registration Statement as may be necessary in order to change the plan of distribution set forth in such Registration Statement.

H. The Company shall use its reasonable best efforts to cause all Registrable Securities registered pursuant to this Agreement to be listed on each securities exchange or trading system on which similar securities issued by the Company are then listed.

4. OBLIGATIONS OF THE PURCHASERS. In connection with the registration of the Registrable Securities, the Purchasers shall have the following obligations:

A. It shall be a condition precedent to the obligations of the Company under Sections 2 and 3 with respect to the Registrable Securities of a particular Purchaser that such Purchaser shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of the Registrable Securities held by it as shall be reasonably required to effect the registration of such Registrable Securities and shall execute such documents in connection with such registration as the Company may reasonably request. At least five (5) trading days prior to the first anticipated filing date of the Initial Registration Statement or the New Registration Statement, as the case may be, the Company shall notify each Purchaser of the information the Company requires from each such Purchaser.

B. Each Purchaser, by such Purchaser's acceptance of the Registrable Securities, agrees to cooperate with the Company as reasonably requested by the Company in connection with the preparation and filing of each Registration Statement hereunder, unless such Purchaser has notified the Company in writing of such Purchaser's election to exclude all of such Purchaser's Registrable Securities from such Registration Statement.

C. Each Purchaser agrees that, upon receipt of any notice from the Company of the happening of any event of the kind described in Sections 3(D) or 9, such Purchaser will immediately discontinue disposition of Registrable Securities pursuant to the Registration Statement covering such Registrable Securities until such Purchaser's receipt of the copies of the supplemented or amended prospectus contemplated by Sections 3(D) or 9.

5. EXPENSES OF REGISTRATION. All reasonable expenses incurred by the Company or the Purchasers in connection with registrations, filings or qualifications pursuant to Sections 2 and 3 above, including, without limitation, all registration, listing and qualifications fees, printers and accounting fees, the fees and disbursements of counsel for the Company and the fees and disbursements of one counsel selected by the Purchasers, shall be borne by the Company, excluding underwriting discounts, selling commissions and similar costs which shall be borne by the Purchasers.

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6. INDEMNIFICATION. In the event any Registrable Securities are included in a Registration Statement under this Agreement:

A. To the extent permitted by law, the Company will indemnify, hold harmless and defend (i) each Purchaser who holds such Registrable Securities, and (ii) the directors, officers, partners, members, employees and agents of such Purchaser and each person who controls any Purchaser within the meaning of Section 15 of the Securities Act or Section 20 of the Securities Exchange Act of 1934, as amended (the "EXCHANGE ACT"), if any, (each, an "INDEMNIFIED PERSON"), against any joint or several losses, claims, damages, liabilities or expenses (collectively, together with actions, proceedings or inquiries by any regulatory or self-regulatory organization, whether commenced or threatened, in respect thereof, "CLAIMS") to which any of them may become subject insofar as such Claims arise out of or are based upon: (i) any untrue statement or alleged untrue statement of a material fact in a Registration Statement or the omission or alleged omission to state therein a material fact required to be stated or necessary to make the statements therein not misleading, (ii) any untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus if used prior to the effective date of such Registration Statement, or contained in the final prospectus (as amended or supplemented, if the Company files any amendment thereof or supplement thereto with the SEC) or the omission or alleged omission to state therein any material fact necessary to make the statements made therein, in light of the circumstances under which the statements therein were made, not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any other law, including, without limitation, any state securities law, or any rule or regulation thereunder relating to the offer or sale of the Registrable Securities (the matters in the foregoing clauses (i) through (iii), collectively, "VIOLATIONS"). Subject to the restrictions set forth in Section 6(C) with respect to the number of legal counsel, the Company shall reimburse the Purchasers and each other Indemnified Person, promptly as such expenses are incurred and are due and payable, for any reasonable legal fees or other reasonable expenses incurred by them in connection with investigating or defending any such Claim. Notwithstanding anything to the contrary contained herein, the obligations of the Company contained in this Section 6(A): (i) shall not apply to a Claim arising out of or based upon (A) a Violation which occurs in reliance upon and in conformity with information furnished in writing to the Company by such Indemnified Person expressly for use in the Registration Statement or any such amendment thereof or supplement thereto, (B) the failure of a Purchaser to comply with Section 4(C) or (C) the use by a Purchaser in connection with any sale or sales of Registrable Securities of a prospectus containing any untrue statement or omission of a material fact following notification by the Company that such prospectus contains an untrue statement or omission of a material fact and receipt by the Purchaser of a corrected prospectus; and (ii) shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of the Company, which consent shall not be unreasonably withheld. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of the Indemnified Person and shall survive the transfer of the Registrable Securities by the Purchasers pursuant to Section 10 hereof.

B. Each Purchaser who holds such Registrable Securities agrees severally and not jointly to indemnify, hold harmless and defend, to the same extent and in the same manner set forth in Section 6(A), the Company, each of its directors, each of its officers who signs the Registration Statement, its employees, agents and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, and any other stockholder selling securities pursuant to the Registration Statement or any of its directors or officers or any person who controls such stockholder within the meaning of the

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Securities Act or the Exchange Act (collectively and together with an Indemnified Person, an "INDEMNIFIED PARTY"), against any Claim to which any of them may become subject, under the Securities Act, the Exchange Act or otherwise, insofar as such Claim arises out of or is based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished to the Company by such Purchaser expressly for use in connection with such Registration Statement; and subject to Section 6(C) such Purchaser will reimburse any legal or other expenses (promptly as such expenses are incurred and are due and payable) reasonably incurred by them in connection with investigating or defending any such Claim; provided, however, that (I) the obligations of a Purchaser contained in this Section 6(B) shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of such Purchaser, which consent shall not be unreasonably withheld, and (II) the Purchaser shall be liable under this Agreement (including this Section 6(B) and Section 7) for only that amount as does not exceed the gross proceeds actually received by such Purchaser as a result of the sale of Registrable Securities pursuant to such Registration Statement. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such Indemnified Party and shall survive the transfer of the Registrable Securities by the Purchasers pursuant to Section 10 hereof.

C. Promptly after receipt by an Indemnified Person or Indemnified Party under this Section 6 of notice of the threat or commencement of any action (including any governmental action), such Indemnified Person or Indemnified Party shall, if a Claim in respect thereof is to be made against any indemnifying party under this Section 6, deliver to the indemnifying party a written notice of the commencement thereof, and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly notified, to assume control of the defense thereof with counsel mutually satisfactory to the indemnifying party and the Indemnified Person or the Indemnified Party, as the case may be; provided, however, that such indemnifying party shall not be entitled to assume such defense and an Indemnified Person or Indemnified Party shall have the right to retain its own counsel with the fees and expenses to be paid by the indemnifying party, if, in the reasonable opinion of counsel retained by the indemnifying party, the representation by such counsel of the Indemnified Person or Indemnified Party and the indemnifying party would be inappropriate due to actual or potential conflicts of interest between such Indemnified Person or Indemnified Party and any other party represented by such counsel in such proceeding or the actual or potential defendants in, or targets of, any such action include both the Indemnified Person or the Indemnified Party and the indemnifying party and any such Indemnified Person or Indemnified Party reasonably determines, based upon the reasonable opinion of counsel, that there may be legal defenses available to such Indemnified Person or Indemnified Party which are in conflict with those available to such indemnifying party. The indemnifying party shall pay for only one separate legal counsel for the Indemnified Persons or the Indemnified Parties, as applicable, and such legal counsel shall be selected by Purchasers holding a majority-in-interest of the Registrable Securities included in the Registration Statement to which the Claim relates (with the approval of the Purchasers if it holds Registrable Securities included in such Registration Statement), if the Purchasers are entitled to indemnification hereunder, or by the Company, if the Company is entitled to indemnification hereunder, as applicable. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action shall not relieve such indemnifying party of any liability to the Indemnified Person or Indemnified Party under this Section 6, except to the extent that the indemnifying party is actually prejudiced in its ability to defend such action.

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D. The Indemnified Party shall cooperate fully with the indemnifying party in connection with any negotiation or defense of any such action or claim by the indemnifying party and shall furnish to the indemnifying party all information reasonably available to the Indemnified Party which relates to such action or claim.

E. No indemnifying party shall, except with the consent of each Indemnified Party (which consent shall not be unreasonably withheld), consent to entry of any judgment or enter into any settlement which does not include the giving by the claimant to such Indemnified Party a release from all liability in respect to such claim or litigation.

7. CONTRIBUTION. To the extent any indemnification by an indemnifying party required by the terms of this Agreement is prohibited or limited by law, the indemnifying party, in lieu of indemnifying the Indemnified Party, agrees to contribute with respect to any amounts for which it would otherwise be liable under Section 6 up to the amount paid or payable by the indemnifying party as a result of the Claims in such proportion as is appropriate to reflect the relative fault of the indemnifying party, on the one hand, and the Indemnified Person or Indemnified Party, as the case may be, on the other hand, with respect to the Violation giving rise to the applicable Claim; provided, however, that (i) no contribution shall be made under circumstances where the maker would not have been liable for indemnification under the fault standards set forth in Section 6, (ii) no person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any seller of Registrable Securities who was not guilty of such fraudulent misrepresentation, and (iii) contribution (together with any indemnification or other obligations under this Agreement) by any seller of Registrable Securities shall be limited in amount to the amount of gross proceeds received by such seller from the sale of such Registrable Securities. The relative fault of the Company and the Purchasers shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of material fact related to information supplied by the Company or the Purchasers and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

8. REPORTS UNDER THE EXCHANGE ACT. With a view to making available to the Purchasers the benefits of Rule 144 promulgated under the Securities Act or any other similar rule or regulation of the SEC that may at any time permit each Purchaser to sell securities of the Company to the public, so long as the Registration Statement is effective and such Purchaser holds Registrable Securities, without registration ("RULE 144"), the Company agrees to:

i. file with the SEC in a timely manner and make and keep available all reports and other documents required of the Company under the Securities Act and the Exchange Act so long as the Company remains subject to such requirements and the filing and availability of such reports and other documents is required for the applicable provisions of Rule 144; and

ii. furnish to each Purchaser so long as such Purchaser owns Registrable Securities, promptly upon request, (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144, the Securities Act and the Exchange Act, (ii) a copy

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of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company, and (iii) such other information as may be reasonably requested to permit the Purchasers to sell such securities under Rule 144 without registration.

9. **SUSPENSION OF USE OF PROSPECTUS.** Subject to Section 2(B), the Company may, by written notice to the Purchasers, (i) delay the filing of, or effectiveness of, a Registration Statement; or (ii) suspend such Registration Statement after effectiveness and require that the Purchasers immediately cease sales of Registrable Securities pursuant to such Registration Statement, if (a) the Company reasonably believes that there is or may be in existence material nonpublic information or events involving the Company, the failure of which to be disclosed in the prospectus included in the registration statement would result in a Violation, and (b) the Company shall furnish to the Purchasers a certificate signed by the Chairman of the Board of Directors of the Company stating that in the good faith judgment of the Board of Directors of the Company, it would have a material adverse effect on the Company (which for this purpose shall include a material adverse effect on a pending transaction) to disclose such material nonpublic information or events in the prospectus included in the registration statement (a "SUSPENSION"). The Company shall not disclose such information or events to any Purchaser. If the Company requires the Purchasers to cease sales of Registrable Securities pursuant to a Suspension, the Company shall, as promptly as practicable following the termination of the circumstance which entitled the Company to do so, take such actions as may be necessary to reinstate the effectiveness of the Registration Statements covering such Registrable Securities, and/or give written notice to the Purchasers authorizing them to resume sales pursuant to the Registration Statements. If, as a result thereof, the prospectuses included in the Registration Statements have been amended to comply with the requirements of the Securities Act, the Company shall enclose such revised prospectuses with the notice to the Purchasers given pursuant hereto, and the Purchasers shall make no offers or sales of Registrable Securities pursuant to the Registration Statements other than by means of such revised prospectus. The Company shall not cause a Suspension on more than two occasions during any twelve (12) month period or for more than thirty (30) days per such occasion.

10. **ASSIGNMENT OF REGISTRATION RIGHTS.** The rights of the Purchasers hereunder, including the right to have the Company register Registrable Securities pursuant to this Agreement, shall be automatically assignable by each Purchaser to any affiliate of the Purchaser to which all or any portion of the Registrable Securities are transferred if: (i) the Purchaser agrees in writing with the transferee or assignee to assign such rights, and a copy of such agreement is furnished to the Company after such assignment, (ii) the Company is furnished with written notice of (a) the name and address of such transferee or assignee, and (b) the securities with respect to which such registration rights are being transferred or assigned, (iii) the transferee or assignee agrees in writing for the benefit of the Company to be bound by all of the provisions contained herein, and (iv) such transfer shall have been made in accordance with the applicable requirements of the Pillar Agreement and the Warrants, as applicable.

11. **AMENDMENT OF REGISTRATION RIGHTS.** Provisions of this Agreement may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively), only with written consent of the Company and Purchasers who hold a majority in interest of the Registrable Securities; provided, however, that no consideration shall be paid to a Purchaser by the Company in connection with an amendment



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hereto unless each Purchaser similarly affected by such amendment receives a pro-rata amount of consideration from the Company. Unless a Purchaser otherwise agrees, each amendment hereto must similarly affect each Purchaser. Any amendment or waiver effected in accordance with this Section 11 shall be binding upon each Purchaser and the Company.

## 12. MISCELLANEOUS.

A. A person or entity is deemed to be a holder of Registrable Securities whenever such person or entity owns of record such Registrable Securities. If the Company receives conflicting instructions, notices or elections from two or more persons or entities with respect to the same Registrable Securities, the Company shall act upon the basis of instructions, notice or election received from the registered owner of such Registrable Securities.

B. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given: (i) upon delivery to the party to be notified, (ii) when received by email or confirmed facsimile, or (iii) one (1) business day after deposit with a nationally recognized overnight carrier, specifying next business day delivery, with written verification of receipt. All communications shall be sent to the Company and the Purchasers as follows or at such other addresses as the Company or the Purchasers may designate upon ten (10) days' advance written notice to the other party:

If to the Company:

Idera Pharmaceuticals, Inc.  
167 Sidney Street  
Cambridge, MA 02139  
Attn: Chief Executive Officer  
Fax: (617)-679-5592  
Email: [sagrawal@iderapharma.com](mailto:sagrawal@iderapharma.com)

with a copy simultaneously transmitted by like means to:

Wilmer Cutler Pickering Hale and Dorr LLP  
60 State Street  
Boston, Massachusetts 02109  
Attn: Stuart Falber  
Fax: (617) 526-5000  
Email: [stuart.falber@wilmerhale.com](mailto:stuart.falber@wilmerhale.com)

If to a Purchaser, at its address as set forth on the Schedule of Purchasers attached to the Pillar Agreement.

C. Failure of any party to exercise any right or remedy under this Agreement or otherwise, or delay by a party in exercising such right or remedy, shall not operate as a waiver thereof.

D. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware without regard to principles of conflicts of law.

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E. This Agreement, the Pillar Agreement (including all schedules and exhibits thereto) and the Warrants constitute the entire agreement among the parties hereto with respect to the subject matter hereof and thereof. There are no restrictions, promises, warranties or undertakings, other than those set forth or referred to herein and therein. This Agreement, the Pillar Agreement and the Warrants supersede all prior agreements and understandings among the parties hereto with respect to the subject matter hereof and thereof.

F. Subject to the requirements of Section 10 hereof, this Agreement shall inure to the benefit of and be binding upon the successors and assigns of each of the parties hereto.

G. The headings in this Agreement are for convenience of reference only and shall not limit or otherwise affect the meaning hereof.

H. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which shall constitute one and the same agreement. This Agreement, once executed by a party, may be delivered to the other party hereto by facsimile transmission of a copy of this Agreement bearing the signature of the party so delivering this Agreement.

I. Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

J. All consents, approvals and other determinations to be made by the Purchasers pursuant to this Agreement shall be made by the Purchasers holding a majority in interest of the Registrable Securities (determined as if all Warrant Shares then outstanding had been converted into or exercised for Registrable Securities) held by all Purchasers.

K. Each party to this Agreement has participated in the negotiation and drafting of this Agreement. As such, the language used herein shall be deemed to be the language chosen by the parties hereto to express their mutual intent, and no rule of strict construction will be applied against any party to this Agreement.

L. For purposes of this Agreement, the term "Business Day" means any day other than a Saturday or Sunday or a day on which banking institutions in the State of New York are authorized or obligated by law, regulation or executive order to close, and the term "Trading Day" means any day on which the Nasdaq Global Market, or if the Common Stock is not then traded on the Nasdaq Global Market the principal securities exchange or trading market where the Common Stock is then listed or traded, is open for trading.

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IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the date first above written.

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal

Name: Sudhir Agrawal

Its: Chief Executive Officer and President

[SIGNATURE PAGE TO REGISTRATION RIGHTS AGREEMENT]

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PURCHASER:

PILLAR PHARMACEUTICALS I, L.P.

By: Pillar Invest Corporation, its General Partner

By: /s/ Youssef El Zein

Name: Youssef El Zein

Title: General Partner

[SIGNATURE PAGE TO REGISTRATION RIGHTS AGREEMENT]

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EXHIBIT A

Purchaser

Pillar Pharmaceuticals I, L.P.

**IDERA PHARMACEUTICALS, INC.  
CERTIFICATE OF AMENDMENT OF  
CERTIFICATE OF DESIGNATIONS, PREFERENCES AND RIGHTS OF  
SERIES D PREFERRED STOCK**

Pursuant to Section 242 of the  
General Corporation Law of the State of Delaware

Idera Pharmaceuticals, Inc., a Delaware corporation (the "Corporation"), in accordance with Section 103 of the General Corporation Law of the State of Delaware (the "General Corporation Law"), hereby certifies as follows:

A Certificate of Designations, Preferences and Rights of Series D Preferred Stock (the "Certificate of Designations") was filed with the Secretary of State of the State of Delaware on November 4, 2011 pursuant to Section 151 of the General Corporation Law. The Board of Directors of the Corporation pursuant to Section 242 of the General Corporation Law duly adopted a resolution setting forth a proposed amendment of the Certificate of Designations, and declaring such amendment advisable. The proposed amendment was duly adopted in accordance with the provisions of Sections 242 of the General Corporation Law. The resolutions setting forth the proposed amendment are as follows:

**[RESOLVED]**, that Section 1.1 of the Certificate of Designations be deleted in its entirety and that the following paragraph be inserted in lieu thereof <sup>1</sup>:

"1.1 Each holder of Series D Preferred Stock shall be entitled to receive, with respect to each share of Series D Preferred Stock then outstanding and held by such holder of Series D Preferred Stock, dividends, commencing from the date of issuance of such share of Series D Preferred Stock, at the rate of seven percent (7%) per annum (on the basis of a 360 day year) of the Series D Original Issue Price (as defined below) (the "**Series D Preferred Dividends**"). The Series D Preferred Dividends shall be cumulative, whether or not earned or declared, shall be paid quarterly in arrears on the last day of December, March, June and September (a "**Quarterly Dividend Payment Date**") in each year that Series D Preferred Stock is outstanding, with the first Quarterly Dividend Payment Date being December 31, 2011, and shall be prorated for periods shorter than one quarter. The rights of a holder of Series D Preferred Stock as Series D Preferred Dividends shall rank senior to the rights of the Corporation's Series A Convertible Preferred Stock as to dividends. The Series D Preferred Dividends shall be paid to each holder of Series D Preferred Stock in cash out of legally available funds or,

<sup>1</sup> This resolution is to be included the Certificate of Amendment to Certificate of Designations, Preferences & Rights of Series D Preferred Stock in the event (and only in the event) that the amendment to the Certificate of Designations (the "First Amendment to Certificate of Designations") as described in Section 5.11(B) of that certain Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, between the Corporation and the purchasers of the Series E Preferred Stock therein (the "Series E Purchase Agreement"), is submitted to the stockholders of the Corporation as contemplated by Section 5.11 of the Series E Purchase Agreement and the First Amendment to Certificate of Designations is not approved.

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at the Corporation's election, through the issuance of such number of shares of the Corporation's Common Stock, par value \$0.001 per share (the "**Common Stock**") (rounded down to the nearest whole share with any fractional shares being issued in cash in an amount equal to the Market Price (as defined in Section 4.2 below) of such fractional share of Common Stock) determined by dividing the amount of the total accrued but unpaid dividends then outstanding on such holder's shares of Series D Preferred Stock by the Market Price then in effect (which for this purpose may not be less than \$1.46 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock); provided, however, that (i) the Corporation may not pay such dividends in shares of Common Stock on or prior to October 1, 2013, (ii) the Corporation may not issue shares of Common Stock in excess of that number of shares of Common Stock which, upon giving effect to such issuance, would cause (a) the aggregate number of shares of Common Stock beneficially owned by a holder of Series D Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), to exceed 19.99% of the total number of issued and outstanding shares of Common Stock of the Corporation following such issuance, or (b) the combined voting power of the securities of the Corporation beneficially owned by a holder of Series D Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act to exceed 19.99% of the combined voting power of all of the securities of the Corporation then outstanding following such issuance, unless, in either case, the Corporation obtains the requisite stockholder approval under NASDAQ Marketplace Rule 5635(b) (the "**Issuance Limitation**"), in which case, the Issuance Limitation under this clause (ii) shall no longer apply to the payment of dividends hereunder and (iii) if clause (ii) shall in fact limit the issuance of any shares of Common Stock in payment of a given dividend, then the Corporation's election to pay such dividend in shares of Common Stock shall be ineffective to the extent of such limitation and such dividend shall instead thereupon be paid, at the Corporation's election, (x) in cash by the Corporation out of legally available funds or (y) through the issuance of a number of shares of the Corporation's Series F Convertible Preferred Stock, par value \$0.01 per share (the "**Series F Preferred Stock**") equal to one-twentieth (1/20<sup>th</sup>) of the number of shares of Common Stock that the Corporation could have issued pursuant to this Section 1.1 with respect to such Series D Preferred Dividends but for the Issuance Limitation. Any election by the Corporation to pay Series D Preferred Dividends in cash or in shares of Common Stock or Series F Preferred Stock shall be made uniformly with respect to all outstanding shares of Series D Preferred Stock for a given dividend period. For purposes of this Section 1.1 the aggregate number of shares of Common Stock or voting securities beneficially owned by a holder of Series D Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act, shall include the shares of Common Stock to be issued as part of such dividend payment, but shall exclude the number of shares of Common Stock which would be issuable upon exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the

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Corporation that do not have voting power (including without limitation any securities of the Corporation which would entitle the holder thereof to acquire at any time Common Stock, including without limitation any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock), subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the holder or any of its affiliates and other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act.]"

**[RESOLVED,** that Section 1.1.2 and Section 1.1.3 of the Certificate of Designations be deleted in their entirety and that the following paragraphs be inserted in lieu thereof<sup>2</sup>:

"1.1.2 The Series D Preferred Dividends shall be paid to each holder of Series D Preferred Stock in cash out of legally available funds or, at the Corporation's election, through the issuance of such number of shares of the Corporation's Common Stock, par value \$0.001 per share (the "**Common Stock**") (rounded down to the nearest whole share with any fractional shares being issued in cash in an amount equal to the Market Price (as defined in Section 4.2 below) of such fractional share of Common Stock) determined by dividing the amount of the total accrued but unpaid dividends then outstanding on such holder's shares of Series D Preferred Stock by the Market Price then in effect (which for this purpose may not be less than \$1.46 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock); provided, however, that (i) the Corporation may not pay such dividends in shares of Common Stock on or prior to October 1, 2013, (ii) the Corporation may not issue shares of Common Stock in excess of that number of shares of Common Stock which, upon giving effect to such issuance, would cause (a) the aggregate number of shares of Common Stock beneficially owned by a holder of Series D Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), to exceed 19.99% of the total number of issued and outstanding shares of Common Stock of the Corporation following such issuance, or (b) the combined voting power of the securities of the Corporation beneficially owned by a holder of Series D Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act to exceed 19.99% of the combined voting power of all of the securities of the Corporation then outstanding following such issuance, unless and until, in either case of clause (a) and clause (b) of this Section 1.1.2, the stockholders of the Corporation approve the Nasdaq Proposal (as defined by and in accordance with Section 5.11(B) of that certain Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, between the Corporation and the Purchasers named therein), in which case, the 19.99% limitation under clause (a) and (b) of this Section 1.1.2 shall be increased, with respect to

<sup>2</sup> This resolution is to be included the Certificate of Amendment to Certificate of Designations, Preferences & Rights of Series D Preferred Stock in the event (and only in the event) that the First Amendment to Certificate of Designations, is submitted to the stockholders of the Corporation as contemplated by Section 5.11 of the Series E Purchase Agreement and the First Amendment to Certificate of Designations is approved.



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any holder of Series D Preferred Stock, to 35% for purposes of both clause (a) and clause (b) of this Section 1.1.2, and (iii) if clause (ii) shall in fact limit the issuance of any shares of Common Stock in payment of a given dividend, then the Corporation's election to pay such dividend in shares of Common Stock shall be ineffective to the extent of such limitation and such dividend shall instead thereupon be paid, at the Corporation's election, (x) in cash by the Corporation out of legally available funds or (y) through the issuance of a number of shares of the Corporation's Series F Convertible Preferred Stock, par value \$0.01 per share (the "**Series F Preferred Stock**") equal to one-twentieth (1/20<sup>th</sup>) of the number of shares of Common Stock that the Corporation could have issued pursuant to this Section 1.1.2 with respect to such Series D Preferred Dividends but for the limitations set forth in clause (a) and clause (b) of this Section 1.1.2.

1.1.3 Any election by the Corporation to pay Series D Preferred Dividends in cash or in shares of Common Stock or Series F Preferred Stock shall be made uniformly with respect to all outstanding shares of Series D Preferred Stock for a given dividend period.】

**RESOLVED**, that Section 4.1.2 of the Certificate of Designations be deleted in its entirety and that the following paragraph be inserted in lieu thereof:

“4.1.2 Termination of Conversion Rights. In the event of a notice of redemption of any shares of Series D Preferred Stock pursuant to Section 5, the Conversion Rights of the shares designated for redemption shall terminate at the close of business on the last full day preceding the date fixed for redemption, unless the redemption price is not fully paid on such redemption date, in which case the Conversion Rights for such shares shall continue until such price is paid in full. In the event of a liquidation, dissolution or winding up of the Corporation or a Sale of the Corporation (as defined in Section 6.2 below), the Conversion Rights shall terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Series D Preferred Stock.”

**RESOLVED**, that Section 6 of the Certificate of Designations be deleted in its entirety and that the following paragraph be inserted in lieu thereof:

“6. Sale of the Corporation.

6.1 In the event of a Sale of the Corporation (as defined below) after payment shall be made to the holders of Series A Convertible Preferred Stock and any other class of capital stock of the Corporation ranking senior to the Series D Preferred Stock upon a Sale of the Corporation, the remaining assets of the Corporation available for distribution to its stockholders shall be distributed among the holders of the shares of Series D Preferred Stock, Series E Preferred Stock and Common Stock pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to Common Stock pursuant to the terms of the Certificate of Incorporation immediately prior to such Sale of the Corporation disregarding for these purposes the limitations on conversion due to beneficial ownership set forth in Subsection 4.1.1.

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6.2 The term “**Sale of the Corporation**” shall mean each of the following events: (a) a merger or consolidation in which (i) the Corporation is a constituent party or (ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation (except in the case of clause (i) and (ii), any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, at least a majority, by voting power, of the capital stock of (y) the surviving or resulting corporation or (z) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation; or (b) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all the assets of the Corporation and its subsidiaries taken as a whole, or the sale or disposition (whether by merger or otherwise) of one or more subsidiaries of the Corporation if substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly owned subsidiary of the Corporation. For the purposes of clarity, a Sale of the Corporation shall not be deemed to be a liquidation, dissolution or winding up of the Corporation for the purposes of this Section 6.”

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IN WITNESS WHEREOF, this Certificate of Amendment has been executed by a duly authorized officer of the Corporation on this    day of    ,  
2013.

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal

Name: Sudhir Agrawal

Title: Chief Executive Officer

**IDERA PHARMACEUTICALS, INC.**  
**CERTIFICATE OF AMENDMENT OF**  
**CERTIFICATE OF DESIGNATIONS, PREFERENCES AND RIGHTS OF**  
**SERIES E PREFERRED STOCK**

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Pursuant to Section 242 of the  
General Corporation Law of the State of Delaware

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Idera Pharmaceuticals, Inc., a Delaware corporation (the "Corporation"), in accordance with Section 103 of the General Corporation Law of the State of Delaware (the "General Corporation Law"), hereby certifies as follows:

A Certificate of Designations, Preferences and Rights of Series E Preferred Stock (the "Certificate of Designations") was filed with the Secretary of State of the State of Delaware on November 9, 2012 pursuant to Section 151 of the General Corporation Law. The Board of Directors of the Corporation pursuant to Section 242 of the General Corporation Law duly adopted a resolution setting forth a proposed amendment of the Certificate of Designations, and declaring such amendment advisable. The proposed amendment was duly adopted in accordance with the provisions of Sections 242 of the General Corporation Law. The resolutions setting forth the proposed amendment are as follows:

**RESOLVED**, that Section 1.1 of the Certificate of Designations be deleted in its entirety and the following new paragraph be inserted in lieu thereof:

"1.1 Series E Preferred Dividends.

1.1.1 Each holder of Series E Preferred Stock shall be entitled to receive with respect to each share of Series E Preferred Stock then outstanding and held by such holder of Series E Preferred Stock, dividends, commencing from the date of issuance of such share of Series E Preferred Stock, at the Initial Dividend Rate (as defined below) per annum (on the basis of a 360 day year) of the Series E Original Issue Price (as defined below) (the "**Series E Preferred Dividends**"); provided, however, that subject to and effective upon the filing with the Delaware Secretary of State of the amendment to the Certificate of Designations, Preferences and Rights of Series D Preferred Stock (the "**Series D Certificate of Designations**," with the amendment thereto being referred to as the "**Amendment to Series D Certificate of Designations**") as described in Section 5.11(B) of that certain Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, between the Corporation and the purchasers of the Series E Preferred Stock therein (the "**Series E Purchase Agreement**"), the dividend rate provided for in this Section 1.1 shall be increased from the Initial Dividend Rate to the rate of eight percent (8%) per annum (on the basis of a 360 day year) of the Series E Original Issue Price. The Series E Preferred Dividends shall be cumulative, whether or not earned or declared, shall be paid

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quarterly in arrears on the last day of March, June, September and December (a “ **Quarterly Dividend Payment Date**”) in each year that Series E Preferred Stock is outstanding, with the first Quarterly Dividend Payment Date being March 31, 2013, and shall be prorated for periods shorter than one quarter. Notwithstanding the foregoing, if, as of any Quarterly Dividend Payment Date at which the dividend rate is the Initial Dividend Rate, there are no shares of the Corporation’s Series D Convertible Preferred Stock outstanding, then the dividend payable on such Quarterly Dividend Payment Date shall be calculated and paid at a rate of eight percent (8%) per annum (on the basis of a 360 day year) of the Series E Original Issue Price. In the event that the Amendment to Series D Certificate of Designations is filed with the Delaware Secretary of State and the dividend rate with respect to the Series E Preferred Dividends is increased pursuant to this Section 1.1.1, the Series E Preferred Dividends paid on the first Quarterly Dividend Payment Date after such filing and increase shall be paid at the increased rate. In the event that the Amendment to Series D Certificate of Designations is submitted to the stockholders of the Corporation as contemplated by Section 5.11 of the Series E Purchase Agreement and the Amendment to Series D Certificate of Designations is not approved, then the holders of the Series E Preferred Stock shall no longer be entitled to any Series E Preferred Dividends under this Section 1.1.1 and the Corporation shall have no further obligation to pay the Series E Preferred Dividends under this Section 1.1.1; provided, however, the Corporation shall not submit the Amendment to the Series D Certificate of Designations to the stockholders if there are no shares of Series D Preferred Stock then outstanding. The rights of a holder of Series E Preferred Stock to Series E Preferred Dividends shall rank senior to the rights of the Corporation’s Series A Convertible Preferred Stock and Series D Convertible Preferred Stock as to dividends. The term “ **Initial Dividend Rate**” shall mean four and six tenths percent (4.6%) or such other percentage approved by the Corporation and by the holders of at least a majority of then outstanding shares of Series E Preferred Stock, with such approval given in writing or by vote at a meeting, consenting or voting (as the case may be) as a separate class.

1.1.2 The Series E Preferred Dividends shall be paid to each holder of Series E Preferred Stock in cash out of legally available funds or, at the Corporation’s election, through the issuance of such number of shares of Common Stock (as defined in Section 1.3 below) (rounded down to the nearest whole share with any fractional shares being issued in cash in an amount equal to the Market Price (as defined in Section 4.2 below) of such fractional share of Common Stock) determined by dividing the amount of the total accrued but unpaid dividends then outstanding on such holder’s shares of Series E Preferred Stock by the Market Price then in effect (which for this purpose may not be less than \$0.70 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Common Stock); provided, however, that (i) the Corporation may not pay such dividends in shares of Common Stock on or prior to October 1, 2013, (ii) the Corporation may not issue shares of Common Stock in excess of that number of shares of Common Stock which, upon giving effect to such issuance, would cause

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(a) the aggregate number of shares of Common Stock beneficially owned by a holder of Series E Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act (as defined in Section 4.1.2), to exceed 19.99% of the total number of issued and outstanding shares of Common Stock of the Corporation following such issuance, or (b) the combined voting power of the securities of the Corporation beneficially owned by a holder of Series E Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act to exceed 19.99% of the combined voting power of all of the securities of the Corporation then outstanding following such issuance, unless and until, in either case of clause (a) and clause (b) of this Section 1.1A, the stockholders of the Corporation approve the Nasdaq Proposal (as defined in Section 3.1 below), in which case, the 19.99% limitation under clause (a) and (b) of this Section 1.1A shall be increased, with respect to any holder of Series E Preferred Stock, to 35% for purposes of both clause (a) and clause (b) of this Section 1.1A, and (iii) if clause (ii) shall in fact limit the issuance of any shares of Common Stock in payment of a given dividend, then the Corporation's election to pay such dividend in shares of Common Stock shall be ineffective to the extent of such limitation and such dividend shall instead thereupon be paid, at the Corporation's election, (x) in cash by the Corporation out of legally available funds or (y) through the issuance of a number of shares of the Corporation's Series F Convertible Preferred Stock, par value \$0.01 per share (the "**Series F Preferred Stock**") equal to one-twentieth (1/20<sup>th</sup>) of the number of shares of Common Stock that the Corporation could have issued pursuant to this Section 1.1.2 with respect to such Series E Preferred Dividends but for the limitations set forth in clause (a) and clause (b) of this Section 1.1.2.

1.1.3 Any election by the Corporation to pay Series E Preferred Dividends in cash or shares of Common Stock and/or Series F Preferred Stock shall be made uniformly with respect to all outstanding shares of Series E Preferred Stock for a given dividend period.

1.1.4 For purposes of this Section 1.1, the aggregate number of shares of Common Stock or voting securities beneficially owned by a holder of Series E Preferred Stock and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act, shall include the shares of Common Stock to be issued as part of such dividend payment, but shall exclude the number of shares of Common Stock which would be issuable upon exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the Corporation that do not have voting power (including without limitation any securities of the Corporation which would entitle the holder thereof to acquire at any time Common Stock, including without limitation any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock), subject to a limitation on conversion or exercise

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analogous to the limitation contained herein beneficially owned by the holder or any of its affiliates and other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Exchange Act.”

**RESOLVED**, that Section 2.3.1 of the Certificate of Designations be deleted in its entirety and that the following paragraph be inserted in lieu thereof:

“2.3.1 In the event of a Sale of the Corporation (as defined below) after payment shall be made to the holders of Series A Convertible Preferred Stock and any other class of capital stock of the Corporation ranking senior to the Series E Preferred Stock upon a Sale of the Corporation, the remaining assets of the Corporation available for distribution to its stockholders shall be distributed among the holders of the shares of Series E Preferred Stock, Series D Preferred Stock and Common Stock pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to Common Stock pursuant to the terms of the Certificate of Incorporation immediately prior to such Sale of the Corporation disregarding for these purposes the limitations on conversion due to beneficial ownership set forth in Subsection 4.1.2.”

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IN WITNESS WHEREOF, this Certificate of Amendment has been executed by a duly authorized officer of the Corporation on this    day of    ,  
2013.

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal

Name: Sudhir Agrawal

Title: Chief Executive Officer