

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT
PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

Date of report (Date of earliest event reported): **December 23, 2019**

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

Delaware
(State or Other
Jurisdiction of
Incorporation)

001-31918
(Commission File
Number)

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

505 Eagleview Blvd., Suite 212
Exton, Pennsylvania
(Address of Principal Executive Offices)

19341
(Zip Code)

Registrant's telephone number, including area code: **(484) 348-1600**

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)).

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.001 per share	IDRA	Nasdaq Capital Market

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

Emerging growth company

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

Item 1.01. Entry into a Material Definitive Agreement.

Private Placement

On December 23, 2019, Idera Pharmaceuticals, Inc. (the “Company”) entered into a Securities Purchase Agreement (the “Securities Purchase Agreement”) with institutional investors named therein (the “Purchasers”), providing for a private placement transaction exempt from the registration requirements of the Securities Act of 1933, as amended (the “Securities Act”), pursuant to which the Company has issued and sold shares of the Company’s Series B1 Convertible Preferred Stock, par value \$0.01 per share (the “Series B1 Preferred Stock”), and warrants (the “Warrants”) to purchase shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”), for aggregate gross proceeds of approximately \$3.9 million (the “Transaction”). Pursuant to the Securities Purchase Agreement, the Company has also agreed to issue and sell to the Purchasers, at their option and subject to certain conditions (including the approval by the Company’s shareholders of an amendment to the Company’s Restated Certificate of Incorporation, as amended, to increase the Company’s authorized shares of Common Stock), shares of the Company’s Series B2 Convertible Preferred Stock, par value \$0.01 per share (“Series B2 Preferred Stock”), Series B3 Convertible Preferred Stock, par value \$0.01 per share (“Series B3 Preferred Stock”), and Series B4 Convertible Preferred Stock, par value \$0.01 per share (“Series B4 Preferred Stock” and, together with the Series B1 Preferred Stock, Series B2 Preferred Stock and Series B3 Preferred Stock, the “Series B Preferred Stock”), and Warrants to purchase Common Stock, for aggregate gross proceeds of up to an additional \$87.6 million over a 21-month period. The transaction was priced at-the-market under the Nasdaq rules. Each share of the Series B1 convertible preferred stock and the associated warrant had a combined purchase price on an as converted basis of \$1.645 and the Purchasers paid the Company an additional \$6.2 million (the “Option Fee”), representing \$0.125 for each share of Common Stock underlying (i) the Series B2 Preferred Stock and accompanying Warrants, (ii) the Series B3 Preferred Stock and accompanying Warrants and (iii) Series B4 Preferred Stock and accompanying Warrants, issuable in the Transaction. In the event the Company does not receive the required shareholder approval on or prior to December 31, 2020, the Option Fee shall be returned to the Purchasers within five business days after such date.

The Warrants issuable pursuant to the Securities Purchase Agreement will be immediately exercisable upon issuance, provided that the holder will be prohibited, subject to certain exceptions, from exercising a Warrant for shares of Common Stock to the extent that immediately prior to or after giving effect to such exercise, the holder, together with its affiliates and other attribution parties, would own more than 4.99% of the total number of shares of Common Stock then issued and outstanding (a “Beneficial Ownership Limitation”), which percentage may be changed at the holder’s election to a lower percentage at any time or to a higher percentage not to exceed 19.99% upon 61 days’ notice to the Company. The Warrants will expire seven years from the date of issuance. The holder may elect to exercise a Warrant for shares of Series B1 Preferred Stock in connection with a Beneficial Ownership Limitation.

Specifically, pursuant to the Securities Purchase Agreement, the Transaction consisted of four separate tranches. In the first tranche the Company issued and sold 23,684 shares of Series B1 Preferred Stock, at a purchase price of \$152 per share and a conversion price of \$1.52 per share, and related Warrants to purchase up to 2,368,400 shares of Common Stock (or, if the holder elects to exercise the Warrants for shares of Series B1 Preferred Stock, 23,684 shares of Series B1 Preferred Stock), at an exercise price of \$1.52 per share (or, if the holder elects to exercise the Warrants for shares of Series B1 Preferred Stock (“Series B1 Preferred Warrant Shares”), \$152 per Series B1 Preferred Warrant Share). In the subsequent three tranches the Company agreed to issue and sell the following securities: (a) tranche 2 consists of 98,685 shares of Series B2 Preferred Stock, at a purchase price of \$152 per share and a conversion price of \$1.52 per share, and related Warrants to purchase up to 9,868,500 shares of Common Stock (or, if the holder elects to exercise the Warrants for shares of Series B1 Preferred Stock, 98,685 shares of Series B1 Preferred Stock, at an exercise price of \$1.52 per share (or, if the holder elects to exercise the Warrants for Series B1 Preferred Warrant Shares, \$152 per Series B1 Preferred Warrant Share); (c) tranche 3 consists of 82,418 shares of Series B3 Preferred Stock, at a purchase price of \$182 per share and a conversion price of \$1.82 per share, and related Warrants to purchase up to 6,593,440 shares of Common Stock (or, if the holder elects to exercise the Warrants for shares of Series B1 Preferred Stock, 65,934 shares of Series B1 Preferred Stock), at an exercise price of \$1.82 per share (or, if the holder elects to exercise the Warrants for Series B1 Preferred Warrant Shares, \$182 per Series B1 Preferred Warrant Share); and (d) tranche 4 consists of 82,418 shares of Series B4 Preferred Stock, at a purchase price of \$182 per share and a conversion price of \$1.82 per share, and related Warrants to purchase up to 6,593,440 shares of Common Stock (or, if the holder elects to exercise the Warrants for shares of Series B1 Preferred Stock, 65,934 shares of Series B1 Preferred Stock), at an exercise price of \$1.82 per share (or, if the holder elects to exercise the Warrants for Series B1 Preferred Warrant Shares, \$182 per Series B1 Preferred Warrant Share).

The purchase and sale of the securities issuable under tranches 2, 3 and 4 may occur in two or more separate closings, each to be conducted at the Purchasers' discretion within five days' notice to the Company, and is subject to the shareholder approval requirement discussed above (the "Required Shareholder Approval"), and the right of the Purchasers to purchase such securities will expire (i) nine months after the Required Shareholder Approval, with respect to the Series B2 Preferred Stock, (ii) 15-months after the Required Shareholder Approval, with respect to the Series B3 Preferred Stock, and (iii) 21-months after the Required Shareholder Approval, with respect to the Series B4 Preferred Stock, if not exercised prior to that date. The Company has the right to decline the Series B4 Preferred Stock investment if its Common Stock trades at \$7.60 for 20 days out of 30 days subsequent to the closing of the Series B3 Preferred Stock investment.

The securities issued and sold in connection with the Transaction are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act. Each Purchaser is either (i) an "accredited investor" as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7) or (a)(8) under the Securities Act or (ii) a "qualified institutional buyer" as defined in Rule 144A(a) under the Securities Act.

Concurrently with the execution of the Securities Purchase Agreement, the Company entered into voting agreements (each, a "Voting Agreement") with the Purchasers, pursuant to which each Purchaser agreed, in any annual, special or adjourned meeting of the shareholders of the Company at which the matter covered by the Required Shareholder Approval are presented to the Company's shareholders for approval, that it will vote, by proxy or otherwise, all of its shares of voting capital stock of the Company (i) in favor of such matter and any matter that would reasonably be expected to facilitate such Required Shareholder Approval, and (ii) against approval of any proposal made in opposition to such matters. The Voting Agreements terminate upon the earliest to occur of (i) the date on which the Company receives the Required Shareholder Approval, (ii) the termination of the Securities Purchase Agreement in accordance with its terms and (iii) December 31, 2020.

In addition, concurrently with the execution of the Securities Purchase Agreement, the Company entered into a registration rights agreement (the "Registration Rights Agreement") with the Purchasers, pursuant to which the Company agreed, following demand by any Purchaser, to file with the Securities and Exchange Commission a Registration Statement on Form S-3 covering the resale of the shares of Common Stock issuable upon conversion of the Series B Preferred Stock or exercise of the Warrants (as applicable) by the Purchasers as promptly as reasonably practicable following such demand, and in any event within 60 days of such demand.

The foregoing descriptions of the Securities Purchase Agreement, Voting Agreement and Registration Rights Agreement do not purport to be complete and are qualified in their entirety by reference to the full text of the Securities Purchase Agreement and the forms of Registration Rights Agreement and Voting Agreement attached thereto as Exhibit C and Exhibit D, respectively, which is filed herewith as Exhibit 10.1 and incorporated herein by reference. The foregoing description of the Warrants does not purport to be complete and is qualified in its entirety by reference to the full text of the form of Warrant, which is filed herewith as Exhibit 4.1 and is incorporated herein by reference.

Item 3.02. Unregistered Sales of Equity Securities.

The information provided in Item 1.01 of this Form 8-K is incorporated by reference into this Item 3.02.

Item 5.03. Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year.

On December 23, 2019, the Company filed a Certificate of Designations, Preferences and Rights of Series B1 Convertible Preferred Stock, Series B2 Convertible Preferred Stock, Series B3 Convertible Preferred Stock and Series B4 Convertible Preferred Stock (the "Certificate of Designations") with the Secretary of State of the State of Delaware with respect to the Series B Preferred Stock.

The rights, preferences and privileges of the Series B Preferred Stock are set forth in the Certificate of Designations. Each share of Series B Preferred Stock is initially convertible into 100 shares of Common Stock (subject to adjustment as provided in the Certificate of Designations) at any time at the option of the holder, provided that the holder will be prohibited from converting the Series B Preferred Stock into shares of Common Stock if, as a result of such conversion, the holder, together with its affiliates and other attribution parties, would own more than 4.99% of the total number of shares of Common Stock then issued and outstanding, which percentage may be changed at the holder's election to a lower percentage at any time or to a higher percentage not to exceed 19.99% upon 61 days' notice to us.

In the event of a liquidation, dissolution, winding up or Deemed Liquidation (as defined in the Certificate of Designations), holders of the Series B Preferred Stock will receive a payment equal to the applicable per share purchase price of their Series B Preferred Stock before any proceeds are distributed to the holders of Common Stock. Shares of Series B Preferred Stock will be entitled to receive dividends equal to (on an as-if-converted-to-Common Stock basis), and in the same form and manner as, dividends actually paid on shares of Common Stock. Shares of Series B Preferred Stock will generally have no voting rights, except to the extent expressly provided in the Company's certificate of incorporation, the Certificate of Designations or as otherwise required by law, and except that the consent of the holders of a majority of the outstanding Series B Preferred Stock will be required to amend the terms of the Series B Preferred Stock and to approve certain corporate actions. Following the date that is five years after issuance, the Series B Preferred Stock is redeemable at the option of the holder at a redemption price that is equal to the original issue price. The liquidation preferences, protective voting provisions and redemption rights of the Series B Preferred Stock will terminate upon the occurrence of certain events described in the Certificate of Designations.

The foregoing description of the Certificate of Designations does not purport to be complete and is qualified in its entirety by reference to the full text of the Certificate of Designations, which is filed herewith as Exhibit 3.1 and is incorporated herein by reference

Item 8.01. Other Events.

On December 23, 2019, the Company issued a press release announcing its entry into the Securities Purchase Agreement. A copy of the press release is attached as Exhibit 99.1 hereto and is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits.

(d) *Exhibits.*

Exhibit Number	Description
<u>3.1</u>	<u>Certificate of Designations, Preferences and Rights of Series B1 Convertible Preferred Stock, Series B2 Convertible Preferred Stock, Series B3 Convertible Preferred Stock and Series B4 Convertible Preferred Stock of the Company.</u>
<u>4.1</u>	<u>Form of Warrant.</u>
<u>10.1</u>	<u>Securities Purchase Agreement, dated December 23, 2019, by and among the institutional investors named therein.</u>
<u>99.1</u>	<u>Press Release of the Company, dated December 23, 2019.</u>

SIGNATURES

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

IDERA PHARMACEUTICALS, INC.

Dated: December 23, 2019

By: /s/ Bryant D. Lim
Bryant D. Lim
Senior V.P., General Counsel

**CERTIFICATE OF DESIGNATIONS, PREFERENCES
AND RIGHTS OF
SERIES B1 CONVERTIBLE PREFERRED STOCK
SERIES B2 CONVERTIBLE PREFERRED STOCK
SERIES B3 CONVERTIBLE PREFERRED STOCK
AND
SERIES B4 CONVERTIBLE PREFERRED STOCK
OF
IDERA PHARMACEUTICALS, INC.**

**(Pursuant to Section 151 of the
Delaware General Corporation Law)**

Idera Pharmaceuticals, Inc., a Delaware corporation (the "Corporation"), hereby certifies that the following resolution was duly approved and adopted by the Board of Directors of the Corporation (the "Board of Directors"), which resolution remains in full force and effect on the date hereof:

RESOLVED, that pursuant to the authority expressly granted to and vested in the Board of Directors by the provisions of the Restated Certificate of Incorporation of the Corporation, as further amended to date (the "Certificate of Incorporation"), and the Amended and Restated Bylaws of the Corporation (the "Bylaws"), and in accordance with Section 151 of the General Corporation Law of the State of Delaware (the "DGCL"), there is hereby created, out of the 5,000,000 shares of Preferred Stock, par value \$0.01 per share (the "Preferred Stock"), of the Corporation remaining authorized, unissued and undesignated:

- a series of the Preferred Stock consisting of 277,921 shares (the "Series B1 Preferred Stock"), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock);
 - a series of the Preferred Stock consisting of 98,685 shares (the "Series B2 Preferred Stock"), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock);
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- a series of the Preferred Stock consisting of 82,418 shares (the “Series B3 Preferred Stock”), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock); and
- a series of the Preferred Stock consisting of 82,418 shares (the “Series B4 Preferred Stock”), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock).

SECTION 1 Designation of Amounts.

(a) 277,921 shares of Preferred Stock shall be, and hereby are, designated the “Series B1 Convertible Preferred Stock” (the “Series B1 Preferred Stock”), par value \$0.01 per share.

(b) 98,685 shares of Preferred Stock shall be, and hereby are, designated the “Series B2 Convertible Preferred Stock” (the “Series B2 Preferred Stock”), par value \$0.01 per share.

(c) 82,418 shares of Preferred Stock shall be, and hereby are, designated the “Series B3 Convertible Preferred Stock” (the “Series B3 Preferred Stock”), par value \$0.01 per share.

(d) 82,418 shares of Preferred Stock shall be, and hereby are, designated the “Series B4 Convertible Preferred Stock” (the “Series B4 Preferred Stock”) and, together with the Series B1 Preferred Stock, Series B2 Preferred Stock and Series B3 Preferred Stock, the “Series B1/B2/B3/B4 Preferred Stock”), par value \$0.01 per share.

(e) Subject to the requirements of the DGCL, the Certificate of Incorporation and this Certificate of Designations, the number of shares of Preferred Stock that are designated as Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock or Series B4 Preferred Stock may be increased or decreased by vote of the Board of Directors; provided, that no decrease shall reduce the number of shares of the applicable series to a number less than the number of such shares then outstanding. Any shares of Series B1/B2/B3/B4 Preferred Stock converted, redeemed, purchased or otherwise acquired by the Corporation in any manner whatsoever shall, automatically and without further action, be retired and canceled promptly after the acquisition thereof, and shall become authorized but unissued shares of Preferred Stock when the Corporation shall take such action as may be necessary to reduce the number of authorized shares of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock or Series B4 Preferred Stock and may be reissued as part of a new series of any class or series of Preferred Stock in accordance with the Certificate of Incorporation and this Certificate of Designations.

SECTION 2 Certain Definitions.

Unless the context otherwise requires, the terms defined in this Section 2 shall have, for all purposes of this resolution, the meanings specified (with terms defined in the singular having comparable meanings when used in the plural).

“Affiliate” means any person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person, as such terms are used in and construed under Rule 405 under the Securities Act.

“Attribution Parties” shall have the meaning set forth in Section 6(c).

“Beneficial Ownership Limitation” shall have the meaning set forth in Section 6(e).

“Board of Directors” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Bylaws” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Certificate of Incorporation” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Common Stock” shall mean the common stock, par value \$0.001 per share, of the Corporation.

“Conversion Date” shall have the meaning set forth in Section 6(e).

“Conversion Notice” shall have the meaning set forth in Section 6(e).

“Conversion Price” shall mean: (a) in the case of Series B1 Preferred Stock, \$1.52 (the “Series B1 Conversion Price”); (b) in the case of Series B2 Preferred Stock, \$1.52 (the “Series B2 Conversion Price”); (c) in the case of Series B3 Preferred Stock, \$1.82 (the “Series B3 Conversion Price”); and (d) in the case of Series B4 Preferred Stock, \$1.82 (the “Series B4 Conversion Price”); in each case, subject to adjustment from time to time in accordance with Section 6(d).

“Corporation” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Deemed Liquidation” Each of the following events shall be considered a “Deemed Liquidation” unless the holders of at least a majority of the outstanding shares of Series B1/B2/B3/B4 Preferred Stock elect otherwise by written notice sent to the Corporation at least 30 days prior to the effective date of any such event:

- (a) a merger or consolidation in which:
 - (i) the Corporation is a constituent party, or
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(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 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 (1) the surviving or resulting corporation; or (2) 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, consolidation 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.

“DGCL” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Exchange Act” shall have the meaning set forth in Section 6(c).

“Fair Market Value” shall mean, with respect to any listed security, its Market Price, and with respect to any property or assets, other than cash or listed securities, the fair value thereof determined in good faith by the Board of Directors.

“Holder” means any holder of Series B1/B2/B3/B4 Preferred Stock, all of such holders being the “Holders.”

“Initial Issue Date” shall mean: (a) with respect to the Series B1 Preferred Stock, the date that shares of Series B1 Preferred Stock are first issued by the Corporation; (b) with respect to the Series B2 Preferred Stock, the date that shares of Series B2 Preferred Stock are first issued by the Corporation; (c) with respect to the Series B3 Preferred Stock, the date that shares of Series B3 Preferred Stock are first issued by the Corporation; and (d) with respect to the Series B4 Preferred Stock, the date that shares of Series B4 Preferred Stock are first issued by the Corporation.

“Junior Securities” shall have the meaning set forth in Section 8(a)(iii).

“Liquidation” shall have the meaning set forth in Section 5(a).

“Market Price” shall mean, as to any class of listed securities, the average of the closing prices of such security’s sales on all United States securities exchanges on which such security may at the time be listed, or, if there have been no sales on any such exchange on any day, the average of the highest bid and lowest asked prices on all such exchanges at the end of such day, or, if on any day such security is not so listed, the average of the representative bid and asked prices quoted by a Permitted Exchange, but not on the basis of “pink sheets, as of 4:00 P.M., New York time, on such day or any successor organization, in each such case averaged over a period of twenty-one (21) days consisting of the day (or if such day is not a trading day, the immediately preceding trading day) as of which “Market Price” is being determined and the twenty (20) consecutive trading days prior to such day.

“Parity Securities” shall have the meaning set forth in Section 8(a)(i).

“Participating Dividends” shall have the meaning set forth in Section 4.

“Permitted Exchange” means any of The New York Stock Exchange, The Nasdaq Global Select Market, The Nasdaq Global Market, The Nasdaq Capital Market (or any of their respective successors).

“person” shall mean any individual, partnership, company, limited liability company, joint venture, association, joint-stock company, trust, unincorporated organization, government or agency or political subdivision thereof, or other entity.

“Preferred Stock” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Preferred Stock Recapitalization Event” shall mean a Series B1 Recapitalization Event, Series B2 Recapitalization Event, Series B3 Recapitalization Event and/or Series B4 Recapitalization Event.

“Redemption Date” shall have the meaning set forth in Section 7(b).

“Redemption Notice” shall have the meaning set forth in Section 7(a).

“Redemption Price” shall have the meaning set forth in Section 7(a).

“Requisite Holders” shall mean the holders of at least a majority of the then outstanding shares of Series B1/B2/B3/B4 Preferred Stock.

“SEC” shall have the meaning set forth in Section 8(b).

“Securities Act” shall mean the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Senior Securities” shall have the meaning set forth in Section 8(a)(i).

“Series B1 Preferred Stock” shall have the meaning set forth in Section 1(a).

“Series B1 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B1 Preferred Stock.

“Series B1 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B1 Preferred Stock on which each of the Series B Conditions are true.

“Series B1 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B1 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B2 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B2 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B3 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B3 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B4 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B4 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B1/B2/B3/B4 Preferred Stock” shall have the meaning set forth in Section 1(c).

“Series B2 Preferred Stock” shall have the meaning set forth in Section 1(b).

“Series B2 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B2 Preferred Stock.

“Series B2 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B2 Preferred Stock on which each of the Series B2 Conditions are true.

“Series B3 Preferred Stock” shall have the meaning set forth in Section 1(c).

“Series B3 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B3 Preferred Stock.

“Series B3 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B3 Preferred Stock on which each of the Series B3 Conditions are true.

“Series B4 Preferred Stock” shall have the meaning set forth in Section 1(c).

“Series B4 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B4 Preferred Stock.

“Series B4 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B4 Preferred Stock on which each of the Series B4 Conditions are true.

“Stated Value” shall mean (a) the per share stated value for a share of Series B1 Preferred Stock of \$152.00, (b) the per share stated value for a share of Series B2 Preferred Stock of \$152.00, (c) the per share stated value for a share of Series B3 Preferred Stock of \$182.00, or (d) the per share stated value for a share of Series B4 Preferred Stock of \$182.00.

“subsidiary” means, with respect to any person, (a) a company a majority of whose capital stock with voting power, under ordinary circumstances, to elect directors is at the time, directly or indirectly, owned by such person, by a subsidiary of such person, or by such person and one or more subsidiaries of such person, (b) a partnership in which such person or a subsidiary of such person is, at the date of determination, a general partner of such partnership, or (c) any other person (other than a company) in which such person, a subsidiary of such person or such person and one or more subsidiaries of such person, directly or indirectly, at the date of determination thereof, has (i) at least a majority ownership interest, (ii) the power to elect or direct the election of the directors or other governing body of such person, or (iii) the power to direct or cause the direction of the affairs or management of such person. For purposes of this definition, a person is deemed to own any capital stock or other ownership interest if such person has the right to acquire such capital stock or other ownership interest, whether through the exercise of any purchase option, conversion privilege or similar right.

“Subsidiary” shall mean a subsidiary of the Corporation.

SECTION 3 Voting Rights.

(a) General. The Series B1/B2/B3/B4 Preferred Stock is non-voting stock. Except as otherwise provided by the DGCL, other applicable law or as provided in this Certificate of Designations, the holders of Series B1/B2/B3/B4 Preferred Stock shall not be entitled to vote (or render written consents) on any matter submitted for a vote of (or written consents in lieu of a vote as permitted by the DGCL, the Certificate of Incorporation and the Bylaws) holders of Common Stock.

(b) Protective Provisions. Until the earlier of (x) the date on which less than 25% of the shares of Series B1/B2/B3/B4 Preferred Stock are outstanding after the applicable Initial Issue Date of the Series B1/B2/B3/B4 Preferred Stock, (y) the Series B1 Transition Date, Series B2 Transition Date, Series B3 Transition Date, or the Series B4 Transition Date, as the case may be and (z) the effective date of a Deemed Liquidation, the Corporation shall not, and shall not permit any of its Subsidiaries to, directly or indirectly, without the affirmative vote (or written consent as permitted by the DGCL, the Certificate of Incorporation and Bylaws) of the Requisite Holders, voting (or consenting) as a separate class:

(i) amend, alter, modify or repeal (whether by merger, consolidation or otherwise) this Certificate of Designations, the Certificate of Incorporation or the Bylaws in any manner that adversely affects the rights, preferences, privileges or the restrictions provided for the benefit of, the Series B1/B2/B3/B4 Preferred Stock;

(ii) authorize, create, designate, issue or sell any (A) class or series of capital stock (including shares of treasury stock) that would be classified as Senior Securities or Parity Securities or (B) rights, options, warrants or other securities (including debt securities) convertible into or exercisable or exchangeable for capital stock or any equity security or having any other equity feature, in each case, that would be classified as either Senior Securities or Parity Securities, except as pursuant to the conversion or exercise of securities issued and outstanding as of the Initial Issue Date of the Series B1 Preferred Stock or pursuant to any agreement in effect on or prior to the Initial Issue Date of the Series B1 Preferred Stock;

(iii) purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend, or make any distribution on, any shares of capital stock of the Corporation, other than redemptions of or dividends or distributions on the Series B1/B2/B3/B4 Preferred Stock as expressly authorized herein; or

(iv) enter into any agreement to do any of the foregoing that is not expressly made conditional on obtaining the affirmative vote or written consent of the Requisite Holders.

SECTION 4 Dividends.

If the Board of Directors shall declare a dividend or other distribution payable upon the then outstanding shares of Common Stock, whether in cash, in kind or in other securities or property, the holders of the outstanding shares of Series B1/B2/B3/B4 Preferred Stock shall be entitled to the amount of dividends as would be payable in respect of the number of shares of Common Stock into which the shares of Series B1/B2/B3/B4 Preferred Stock held by each holder thereof could be converted, without regard to any restrictions on conversion, in accordance with the provisions of Section 6 hereof, such number to be determined as of the record date for determination of holders of Common Stock entitled to receive such dividend or, if no such record date is established, as of the date of such dividend ("Participating Dividends"). Participating Dividends are payable at the same time as and when dividends on the Common Stock are paid to the holders of Common Stock.

SECTION 5 Liquidation Preference.

(a) Liquidation Preference of Series B1/B2/B3/B4 Preferred Stock. Subject to Section 5(b) and Section 5(f) below, in the event of any liquidation, dissolution, or winding up of the Corporation whether voluntary or involuntary, or in the event of its insolvency (a "Liquidation") or Deemed Liquidation, the holders of Series B1/B2/B3/B4 Preferred Stock shall be entitled to have set apart for them, or to be paid, out of the assets of the Corporation available for distribution to stockholders (whether such assets are capital, surplus or earnings) after provision for payment of all debts and liabilities of the Corporation in accordance with the DGCL, before any distribution or payment is made with respect to any shares of Junior Securities and subject to the liquidation rights and preferences of any class or series of Senior Securities and Parity Securities, an amount equal to the applicable Stated Value per share of Series B1/B2/B3/B4 Preferred Stock (which amount shall be subject to an equitable adjustment in the event of any Preferred Stock Recapitalization Event).

(b) Insufficient Assets. If, upon any Liquidation or Deemed Liquidation, the assets legally available for distribution among the holders of the Series B1/B2/B3/B4 Preferred Stock and any Parity Securities of the Corporation shall be insufficient to permit payment to such holders of the full preferential amounts as provided for in Section 5(a) above, then such holders shall share ratably in any distribution of available assets according to the respective amounts which would otherwise be payable with respect to the securities held by them upon such liquidating distribution if all amounts payable on or with respect to such securities were paid in full, based upon the aggregate liquidation value payable upon all shares of Series B1/B2/B3/B4 Preferred Stock and any Parity Securities then outstanding.

(c) Distribution to Junior Securities. After such payment shall have been made in full to the holders of the Series B1/B2/B3/B4 Preferred Stock, or funds necessary for such payment shall have been set aside by the Corporation in trust for the account of holders of the Series B1/B2/B3/B4 Preferred Stock so as to be available for such payment, the remaining assets available for distribution shall be distributed ratably among the holders of the Junior Securities in accordance with the terms of such securities.

(d) Distributions Other than Cash. Whenever the distribution provided for in this Section 5 shall be payable in property other than cash, the value of such distribution shall be the Fair Market Value thereof. All distributions (including distributions other than cash) made hereunder shall be made *pro rata* to the holders of Series B1/B2/B3/B4 Preferred Stock.

(e) Equitable Adjustments. The amounts to be paid or set aside for payment as provided above in this Section 5 shall be proportionately increased or decreased in inverse relation to the change in the number of outstanding shares resulting from any Preferred Stock Recapitalization Event.

(f) Loss of Liquidation Preferences. Notwithstanding anything to the contrary in this Section 5: (i) from and after the Series B1 Transition Date, the holders of Series B1 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation; (ii) from and after the Series B2 Transition Date, the holders of Series B2 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation; (iii) from and after the Series B3 Transition Date, the holders of Series B3 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation; and (iv) from and after the Series B4 Transition Date, the holders of Series B4 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation.

SECTION 6 Conversion Rights.

(a) General. Subject to and upon compliance with the provisions of this Section 6, each Holder shall be entitled, at its option, at any time and from time to time, to convert all or any such shares of Series B1/B2/B3/B4 Preferred Stock into the number of fully paid and nonassessable shares of Common Stock equal to the number obtained by dividing (i) the Stated Value of such Series B1/B2/B3/B4 Preferred Stock (which amount shall be subject to an equitable adjustments in the event of any Preferred Stock Recapitalization Event) by (ii) the Conversion Price in effect on the Conversion Date (determined as provided in this Section 6).

(b) Fractions of Shares. Fractional shares of Common Stock may not be issued in connection with any conversion. If any fractional interest in a share would be deliverable upon conversion, such fractional share shall be rounded down to the next whole number.

(c) Conversion Limitations. The Corporation shall not effect any conversion of the Series B1/B2/B3/B4 Preferred Stock, and the Holder shall not have the right to convert any portion of the Series B1/B2/B3/B4 Preferred Stock, pursuant to this Section 6 or otherwise, to the extent that after giving effect to such issuance after conversion, the Holder (together with the Holder's Affiliates, and any other persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation. For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon conversion of the Series B1/B2/B3/B4 Preferred Stock with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised shares of Series B1/B2/B3/B4 Preferred Stock beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Corporation subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 6, beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Corporation is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 6 applies, the determination of whether the Series B1/B2/B3/B4 Preferred Stock is convertible (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of the Series B1/B2/B3/B4 Preferred Stock is convertible shall be in the sole discretion of the Holder, and the submission of a Conversion Notice shall be deemed to be the Holder's determination of whether the Series B1/B2/B3/B4 Preferred Stock is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of the Series B1/B2/B3/B4 Preferred Stock is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Corporation shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 6, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Corporation's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Corporation or (C) a more recent written notice by the Corporation or its transfer agent setting forth the number of shares of Common Stock outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Corporation, including the Series B1/B2/B3/B4 Preferred Stock, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99%; *provided that*, by written notice to the Company, the Holder may from time to time increase or decrease the Beneficial Ownership Limitation to any other percentage not in excess of 19.99% specified in such notice; provided that (i) any increase from a limit set pursuant to this sentence or pursuant to a previous notice will not be effective until the sixty-first (61st) day after such notice (or subsequent notice) is delivered to the Company, and (ii) any such increase or decrease will apply only to the Holder and not to any other Holder of Series B1/B2/B3/B4 Preferred Stock. In accordance with the applicable listing standards, the restrictions set forth in this Section 6(c), will apply at any time when the Series B1/B2/B3/B4 Preferred Stock is outstanding, regardless of whether the Corporation then has a class of securities listed on a Permitted Exchange. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 6 to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation.

(d) Adjustments to Conversion Price.

(i) Upon Stock Dividends, Subdivisions or Splits. If, at any time after the date hereof, the number of shares of Common Stock outstanding is increased by a stock dividend payable in shares of Common Stock or by a subdivision or split-up of shares of Common Stock, then, following the record date for the determination of holders of Common Stock entitled to receive such stock dividend, or to be affected by such subdivision or split-up, the Conversion Price shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of Series B1/B2/B3/B4 Preferred Stock shall be increased in proportion to such increase in outstanding shares.

(ii) Upon Combinations. If, at any time after the date hereof, the number of shares of Common Stock outstanding is decreased by a combination of the outstanding shares of Common Stock into a smaller number of shares of Common Stock, then, following the record date to determine shares affected by such combination, the Conversion Price shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of Series B1/B2/B3/B4 Preferred Stock shall be decreased in proportion to such decrease in outstanding shares.

(iii) Capital Reorganization, Reclassification, Merger or Sale of Assets. If at any time or from time to time there shall be (A) a capital reorganization of the Common Stock, (B) a reclassification of the Common Stock (other than a subdivision, combination, or exchange of shares provided for elsewhere in this Section 6) or (C) a merger or consolidation of the Corporation with or into another corporation, or the sale of all or substantially all of the Corporation's properties and assets to any other person, then, as a part of such reorganization, reclassification, merger, or consolidation or sale, provision shall be made so that holders of Series B1/B2/B3/B4 Preferred Stock, as the case may be, shall thereafter be entitled to receive upon conversion of the Series B1/B2/B3/B4 Preferred Stock, the kind and amount of shares of stock or other securities or property of the Corporation, or of the successor corporation resulting from such merger, consolidation or sale, to which such holder would have been entitled if such holder had converted its shares of Series B1/B2/B3/B4 Preferred Stock immediately prior to such capital reorganization, reclassification, merger, consolidation or sale. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 6(d) with respect to the rights of the holders of the Series B1/B2/B3/B4 Preferred Stock after the reorganization, reclassification, merger, consolidation or sale to the end that the provisions of this Section 6(d), including adjustment of the Conversion Price then in effect for the Series B1/B2/B3/B4 Preferred Stock and the number of shares issuable upon conversion of the Series B1/B2/B3/B4 Preferred Stock) shall be applicable after that event in as nearly equivalent a manner as may be practicable.

(e) Exercise of Conversion Privilege. In order to exercise the conversion privilege, the holder of any share of Series B1/B2/B3/B4 Preferred Stock shall, if such Holder's shares are certificated, surrender the certificate evidencing such share of Series B1/B2/B3/B4 Preferred Stock, duly endorsed or assigned to the Corporation in blank, at any office or agency of the Corporation maintained for such purpose, accompanied by written notice (a "Conversion Notice") to the Corporation at such office or agency that the holder elects to convert such Series B1/B2/B3/B4 Preferred Stock or, if less than the entire amount thereof is to be converted, the portion thereof to be converted. Series B1/B2/B3/B4 Preferred Stock shall be deemed to have been converted immediately prior to the close of business on the date (the "Conversion Date") of surrender of such shares of Series B1/B2/B3/B4 Preferred Stock for conversion in accordance with the foregoing provisions, and at such time the rights of the Holder as a Holder shall cease, and the person or persons entitled to receive the Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such Common Stock as and after such time. As promptly as practicable on or after the Conversion Date, the Corporation shall issue and shall deliver at any office or agency of the Corporation maintained for the surrender of Series B1/B2/B3/B4 Preferred Stock a certificate or certificates for the number of full shares of Common Stock issuable upon conversion (or a notice of such issuance if uncertificated shares are issued). In the case of any certificate evidencing shares of Series B1/B2/B3/B4 Preferred Stock that is converted in part only, upon such conversion the Corporation shall also execute and deliver a new certificate evidencing the number of shares of Series B1/B2/B3/B4 Preferred Stock that are not converted (or a notice of such issuance if uncertificated shares are issued).

(f) Notice of Adjustment of Conversion Price. Whenever the provisions of Section 6(d) require that the Conversion Price be adjusted as herein provided, the Corporation shall compute the adjusted Conversion Price in accordance with Section 6(d) and shall prepare a certificate signed by the Corporation's chief executive officer or chief financial officer setting forth the adjusted Conversion Price and showing in reasonable detail the facts upon which such adjustment is based, and such certificate shall forthwith be filed at each office or agency maintained for such purpose for conversion of shares of Series B1/B2/B3/B4 Preferred Stock and mailed by the Corporation at its expense to all holders of Series B1/B2/B3/B4 Preferred Stock at their last addresses as they shall appear in the stock register.

(g) Corporation to Reserve Common Stock. The Corporation shall at all times reserve and keep available, free from preemptive rights, out of the authorized but unissued Common Stock or out of the Common Stock held in treasury, for the purpose of effecting the conversion of Series B1/B2/B3/B4 Preferred Stock, the full number of shares of Common Stock issuable upon the conversion of all outstanding shares of Series B1/B2/B3/B4 Preferred Stock. Before taking any action that would cause an adjustment reducing the Conversion Price below the then par value (if any) of the shares of Common Stock deliverable upon conversion of the Series B1/B2/B3/B4 Preferred Stock, the Corporation will take any corporate action that, in the opinion of its counsel, is necessary in order that the Corporation may validly and legally issue fully paid and non-assessable shares of Common Stock at such adjusted Conversion Price.

(h) Taxes on Conversions. The Corporation will pay any and all original issuance, transfer, stamp and other similar taxes that may be payable in respect of the issue or delivery of shares of Common Stock on conversion of Series B1/B2/B3/B4 Preferred Stock pursuant hereto. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issue and delivery of shares of Common Stock in a name other than that of the holder of the share(s) of Series B1/B2/B3/B4 Preferred Stock to be converted (nor shall the Corporation be responsible for any other taxes payable by the holders of the Series B1/B2/B3/B4 Preferred Stock), and no such issue or delivery shall be made unless and until the person requesting such issue has paid to the Corporation the amount of any such tax, or has established to the satisfaction of the Corporation that such tax has been paid.

SECTION 7 Redemption of Series B1/B2/B3/B4 Preferred Stock.

(a) Redemption at the Election of Holders of Series B1/B2/B3/B4 Preferred Stock. Subject to Section 7(c) and Section 7(f) below, at any time on or after the fifth (5th) anniversary of the Initial Issue Date of the applicable series of Series B1/B2/B3/B4 Preferred Stock, each Holder may elect, by delivering an irrevocable written notice (each a "Redemption Notice") to the Corporation, to have the Corporation redeem all or any portion of the Series B1/B2/B3/B4 Preferred Stock held by such Holder, as applicable, at a price per share (the "Redemption Price") equal to the Stated Value per share. The Corporation shall, unless otherwise prevented by law, redeem from such Holder, on the Redemption Date, the number of shares of Series B1/B2/B3/B4 Preferred Stock identified in such notice of election.

(b) Redemption Closing. The closing of the Corporation's redemption of the Series B1/B2/B3/B4 Preferred Stock pursuant to this Section 7 shall take place at 11:00 a.m. Eastern Time on the date set forth in the applicable Redemption Notice, provided that such date shall not be earlier than the fourteenth (14th) calendar day following the date of such Redemption Notice (the "Redemption Date"), at the Corporation's principal executive office or other mutually agreed upon location where the closing will occur. At the closing, the Corporation shall pay to each holder of Series B1/B2/B3/B4 Preferred Stock from whom shares of Series B1/B2/B3/B4 Preferred Stock are being redeemed an amount equal to the aggregate applicable Redemption Price for all such shares against receipt from such holder of the certificate or certificates, if any, duly endorsed or assigned to the Corporation in blank, representing the shares of Series B1/B2/B3/B4 Preferred Stock being redeemed. All such payments shall be made by wire transfer of immediately available funds or, if any such holder shall not have specified wire transfer instructions to the Corporation prior to the closing, by certified or official bank check payable to the order of the Holder. In the case of any certificate evidencing shares of Series B1/B2/B3/B4 Preferred Stock that is redeemed in part only, upon such redemption the Corporation shall also execute and deliver a new certificate (or a notice of such issuance if uncertificated shares are issued) evidencing the number of shares of Series B1/B2/B3/B4 Preferred Stock that are not redeemed.

(c) Insufficient Funds. If the Corporation shall not be permitted, or shall not have funds legally available in the amount necessary, to redeem all shares of Series B1/B2/B3/B4 Preferred Stock to be redeemed on the applicable Redemption Date, then the Series B1/B2/B3/B4 Preferred Stock shall be redeemed by the Corporation on such Redemption Date to the maximum extent the Corporation is permitted and has funds legally available on a *pro rata* basis, in accordance with the number of shares to be redeemed from each such Holder of Series B1/B2/B3/B4 Preferred Stock. The Corporation shall immediately redeem such shares of Series B1/B2/B3/B4 Preferred Stock upon the termination of such legal prohibition and at any time thereafter when additional funds of the Corporation are legally available for the redemption of such shares of Series B1/B2/B3/B4 Preferred Stock, such funds will be used, at the end of the next succeeding fiscal quarter, to redeem the balance of such shares, or such portion thereof for which funds are then legally available, on the basis set forth above. In the event that the Corporation has received multiple Redemption Notices with multiple Redemption Dates, the shares subject to redemption on the earliest Redemption Date shall be redeemed in priority to shares to be redeemed on later Redemption Date(s).

(d) Effect of Redemption. From and after the close of business on the applicable Redemption Date, unless there shall have been a default in the payment of the Redemption Price, all rights (except the right to receive the Redemption Price) of the Holders of Series B1/B2/B3/B4 Preferred Stock with respect to the shares of Series B1/B2/B3/B4 Preferred Stock to be redeemed on such date shall cease and terminate, and such shares shall not thereafter be transferred on the books of the Corporation or be deemed to be outstanding for any purpose whatsoever whether or not the certificates representing such shares have been received by the Corporation; provided, however, that, notwithstanding anything contained herein to the contrary, (i) if the Corporation defaults in the payment of the Redemption Price, the rights of such holders with respect to such shares of Series B1/B2/B3/B4 Preferred Stock shall continue until the Corporation cures such default, and (ii) without limiting any other rights of such holders, upon the occurrence of a subsequent Liquidation or Deemed Liquidation, with respect to the shares of Series B1/B2/B3/B4 Preferred Stock in respect of which the payment of the Redemption Price has not occurred, such holders shall be accorded the rights to liquidation preference payments as set forth in Section 5 hereof in respect of such remaining shares, as if no prior redemption request had been made. The shares of Series B1/B2/B3/B4 Preferred Stock not redeemed shall remain outstanding and entitled to all rights and preferences provided herein.

(e) Miscellaneous. Neither the Corporation nor any Subsidiary shall offer to purchase, redeem or acquire any shares of Series B1/B2/B3/B4 Preferred Stock other than pursuant to the terms of this Certificate of Designations or pursuant to a purchase offer made to all holders of Series B1/B2/B3/B4 Preferred Stock *pro rata* based upon the number of such shares owned by each such holder.

(f) Loss of Redemption Rights. Notwithstanding anything to the contrary in this Section 7: (i) from and after the Series B1 Transition Date, the Holders of Series B1 Preferred Stock shall not be entitled to redemption of their shares of Series B1 Preferred Stock pursuant to this Section 7; (ii) from and after the Series B2 Transition Date, the Holders of Series B2 Preferred Stock shall not be entitled to redemption of their shares of Series B2 Preferred Stock pursuant to this Section 7; (iii) from and after the Series B3 Transition Date, the Holders of Series B3 Preferred Stock shall not be entitled to redemption of their shares of Series B3 Preferred Stock pursuant to this Section 7; and (iv) from and after the Series B4 Transition Date, the Holders of Series B4 Preferred Stock shall not be entitled to redemption of their shares of Series B4 Preferred Stock pursuant to this Section 7. For the avoidance of doubt, any shares of Series B1/B2/B3/B4 Preferred Stock for which rights of redemption have been lost pursuant to this Section 7(f) and that were the subject of a Redemption Notice provided prior to the applicable Transition Date, shall no longer be subject to redemption and the Corporation shall be relieved of any obligation to redeem such shares in accordance with this Section 7.

SECTION 8 Ranking; Notification of Lost Rights; Legends.

(a) Ranking. For purposes of this Certificate of Designation, any stock of any class or classes of the Corporation shall be deemed to rank:

(i) prior to the shares of this Series B1/B2/B3/B4 Preferred Stock, either as to dividends or upon liquidation, if the holders of such class or classes shall be entitled to the receipt of dividends or of amounts distributable upon dissolution, liquidation or winding up of the Corporation, as the case may be, in preference or priority to the holders of shares of this Series B1/B2/B3/B4 Preferred Stock (any such securities, “Senior Securities”);

(ii) pari passu to the shares of this Series B1/B2/B3/B4 Preferred Stock, either as to dividends or upon liquidation, if the holders of such class or classes shall be entitled to the receipt of dividends or of amounts distributable upon dissolution, liquidation or winding up of the Corporation, as the case may be, pari passu with the holders of shares of this Series B1/B2/B3/B4 Preferred Stock (any such securities, “Parity Securities”);

(iii) junior to shares of this Series B1/B2/B3/B4 Preferred Stock, either as to dividends or upon liquidation, if such class shall be Common Stock or if the holders of shares of the Series B1/B2/B3/B4 Preferred Stock shall be entitled to receipt of dividends or of amounts distributable upon dissolution, liquidation or winding up of the Corporation, as the case may be, in preference or priority to the holders of shares of such class or classes (any such securities, “Junior Securities”).

(b) Notification of Lost Rights. The Corporation shall provide notice to the Holders of the applicable series of Series B1/B2/B3/B4 Preferred Stock of the Series B1 Transition Date, Series B2 Transition Date, Series B3 Transition Date or Series B4 Transition Date, as the case may be, within the thirty (30) days following the applicable Transition Date, which notice will be deemed provided if delivered to such Holders in writing or via email, or if disclosed by the Company pursuant to a press release linked on the Company’s website, in a Current Report on Form 8-K filed with the U.S. Securities and Exchange Commission (the “SEC”), in a Quarterly Report on Form 10-Q filed with the SEC, or in an Annual Report on Form 10-K filed with the SEC.

(c) Legends. In the event the Board of Directors determines that the shares of Series B1/B2/B3/B4 Preferred Stock shall be certificated, the Corporation shall include on such certificates any legends that the Board determines to be necessary or appropriate.

SECTION 9 Amendment and Waiver. Notwithstanding anything to the contrary herein, the amendment or waiver of any provisions of this Certificate of Designation can be approved by the Requisite Holders.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Designations, Preferences and Rights to be duly executed by its Senior V.P., General Counsel this 23rd day of December 2019.

IDERA PHARMACEUTICALS, INC.

By: /s/ Bryant D. Lim

Name: Bryant D. Lim

Title: Senior V.P., General Counsel

NEITHER THESE SECURITIES NOR THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR APPLICABLE STATE SECURITIES LAWS. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES.

[FORM OF WARRANT]

IDERA PHARMACEUTICALS, INC.

WARRANT TO PURCHASE COMMON STOCK OR SERIES B1 PREFERRED STOCK

Warrant No.: []

Number of Shares of Common Stock or Series B1 Preferred Stock: []

Date of Issuance: [] ("**Issuance Date**")

Expiration Date: []¹ ("**Expiration Date**")

Idera Pharmaceuticals, Inc., a Delaware corporation (the "**Company**"), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, , the registered holder hereof or its permitted assigns (the "**Holder**"), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, at any time or times on or after the Issuance Date, but not after 11:59 p.m., New York time, on the Expiration Date, the Warrant Shares (as defined below). Except as otherwise defined herein, capitalized terms in this Warrant to Purchase Common Stock or Series B1 Preferred Stock (including any Warrants to Purchase Common Stock or Series B1 Preferred Stock issued in exchange, transfer or replacement hereof, this "**Warrant**"), shall have the meanings set forth in Section 14. This Warrant is one of the Warrants to Purchase Common Stock or Series B1 Preferred Stock (the "**Warrants**") issued in connection with the transactions contemplated by that certain Securities Purchase Agreement, dated as of December [], 2019 (the "**Subscription Date**") by and between the Company, the holder and the other purchasers set forth on the schedule of purchasers thereto (the "**Securities Purchase Agreement**").

¹ 7 years from the Issuance Date

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. Subject to the terms and conditions hereof (including, without limitation, the limitations set forth in Section 1(e)), this Warrant may be exercised by the Holder at any time or times on or after the Issuance Date, in whole or in part, by delivery (whether via facsimile, electronic mail or otherwise) of a written notice, in the form attached hereto as Exhibit A (the “**Exercise Notice**”), of the Holder’s election to exercise this Warrant. Within one (1) Trading Day following the delivery of the Exercise Notice, the Holder shall make payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the “**Aggregate Exercise Price**”) in cash by wire transfer of immediately available funds or, if the provisions of Section 1(d) are applicable, by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(d)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder (until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full), nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares and the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. On or before the first (1st) Trading Day following the date on which the Holder has delivered the applicable Exercise Notice, the Company shall transmit by facsimile or electronic mail an acknowledgment of confirmation of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Company’s transfer agent (the “**Transfer Agent**”). So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the earlier of (i) the second (2nd) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the first (1st) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) is delivered (such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall (X) provided that the Transfer Agent is participating in The Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer Program, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program (“**FAST**”), issue and dispatch by overnight courier to the address as specified in the Exercise Notice, a certificate, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record and beneficial owner of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be. If this Warrant is physically delivered to the Company in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 6(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional shares of Common Stock are to be issued upon the exercise of this Warrant, but rather the number of shares of Common Stock to be issued shall be rounded down to the nearest whole number. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent) which may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant. The Company’s obligations to issue and deliver Warrant Shares in accordance with the terms and subject to the conditions hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination; provided, however, that the Company shall not be required to deliver Warrant Shares with respect to an exercise prior to the Holder’s delivery of the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) with respect to such exercise.

(b) Company's Failure to Timely Deliver Securities. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 1(a) above pursuant to an exercise on or before the Share Delivery Date (other than a failure caused by incorrect or incomplete information provided by the Holder to the Company), and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence, the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice within three (3) Trading Days after the occurrence of a Buy-In, indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

(c) Cashless Exercise. Notwithstanding anything contained herein to the contrary, if a registration statement covering the issuance or resale of the shares of Common Stock that constitute Warrant Shares is not available for the issuance or resale, as applicable, of such Warrant Shares, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the “Net Number” of shares of Common Stock determined according to the following formula (a “**Cashless Exercise**”):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares of Common Stock with respect to which this Warrant is then being exercised.

B= as applicable: (i) the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock as of the time of the Holder’s execution of the applicable Exercise Notice if such Exercise Notice is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Closing Sale Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of “regular trading hours” on such Trading Day.

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the Securities Act of 1933, as amended (the “**Securities Act**”), the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 1(c).

(d) **Disputes.** In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 9.

(e) **Beneficial Ownership.** Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to the terms and conditions of this Warrant and any such exercise shall be null and void and treated as if never made, to the extent that immediately prior to or after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in excess of 4.99% (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (A) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 1(e). For purposes of this Section 1(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 1(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of this Warrant without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the “**SEC**”), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the “**Reported Outstanding Share Number**”). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder’s beneficial ownership, as determined pursuant to this Section 1(e), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the “**Reduction Shares**”) and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the Exchange Act), the number of shares so issued by which the Holder’s and the other Attribution Parties’ aggregate beneficial ownership exceeds the Maximum Percentage (the “**Excess Shares**”) shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage as specified in such notice not in excess of 19.99%; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the Exchange Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(e) to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(e) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant.

(f) Required Reserve Amount. So long as this Warrant remains outstanding, the Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock and Series B1 Preferred Stock at least equal to 100% of the maximum number of shares of Common Stock and Series B1 Preferred Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock or Series B1 Preferred Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "**Required Reserve Amount**"); provided that at no time shall the number of shares of Common Stock and Series B1 Preferred Stock reserved pursuant to this Section 1(f) be reduced other than in connection with any exercise of Warrants or such other event covered by Section 2 below. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock or Series B1 Preferred stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "**Authorized Share Allocation**"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock and Series B1 Preferred Stock reserved and allocated to any Person which ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock or Series B1 Preferred Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise).

(g) Insufficient Authorized Shares. If at any time while this Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock or Series B1 Preferred Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an "**Authorized Share Failure**"), then the Company shall promptly take all action reasonably necessary to increase the Company's authorized shares of Common Stock and Series B1 Preferred Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for this Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than 180² days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock and/or Series B1 Preferred Stock, as the case may be. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders' approval of such increase in authorized shares of Common Stock and/or Series B1 Preferred Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal.

² NTD: The Company needs 180 days because they traditionally hold their ASM in early June.

2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES UPON SUBDIVISION OR COMBINATION OF COMMON STOCK OR SERIES B1 PREFERRED STOCK.

(a) Subdivisions or Combinations. If the Company at any time on or after the Issuance Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock or Series B1 Preferred Stock into a greater number of shares, the applicable Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of the applicable Warrant Shares will be proportionately increased. If the Company at any time on or after the Subscription Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock or Series B1 Preferred Stock into a smaller number of shares, the applicable Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of the applicable Warrant Shares will be proportionately decreased. Any adjustment under this Section 2(a) shall become effective at the close of business on the date the subdivision or combination becomes effective.

(b) Voluntary Adjustment by Company. The Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

(c) Rights Upon Distribution of Assets. In addition to any adjustments pursuant to the other subsections of this Section 2, if, on or after the Issuance Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder’s right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

(d) Purchase Rights. In addition to any adjustments pursuant to the other subsections of Section 2 above, if at any time on or after the Issuance Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the “**Purchase Rights**”), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (provided, however, that to the extent that the Holder’s right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(e) Fundamental Transactions. The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3, including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, which is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Notwithstanding the foregoing, and without limiting Section 1(e) hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 3 to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a "**Corporate Event**"), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the "**Corporate Event Consideration**") which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Holder. The provisions of this Section 3 shall apply similarly and equally to successive Fundamental Transactions and Corporate Events. Notwithstanding the foregoing, in the event of a Change of Control (other than a Change of Control which was not approved by the Board of Directors, as to which this right shall not apply), at the request of the Holder delivered before the 30th day after such Change of Control, the Company (or the Successor Entity) shall purchase this Warrant from the Holder by paying to the Holder, within five (5) Business Days after such request (or, if later, on the effective date of the Change of Control), an amount equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the effective date of such Change of Control, payable in cash; provided, that if the applicable Change of Control was not approved by the Company's Board of Directors, the Black-Scholes Value of the remaining unexercised portion of this Warrant shall be payable at the option of the Company in either (x) Common Stock, whereby the Company would be continually obligated to actively settle shares of Common Stock in the event insufficient authorized shares of Common Stock were available (or corresponding Corporate Event Consideration, as applicable) valued at the value of the consideration received by the shareholders in such Change of Control or (y) cash.

3. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its certificate of incorporation or by-laws, or through any reorganization, transfer of assets, consolidation, merger, scheme, arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all of the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock or Series B1 Preferred Stock receivable upon the exercise of this Warrant above the applicable Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock or Series B1 Preferred Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock and Series B1 Preferred Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock and Series B1 Preferred Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

4. WARRANT HOLDER NOT DEEMED A STOCKHOLDER. Except as otherwise specifically provided herein, the Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of capital stock of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

5. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 5(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 5(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company 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, of any indemnification undertaking by the Holder to the Company in customary form (but without the obligation to post a bond) and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 5(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 5(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 5(a) or Section 5(c), the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

6. NOTICES. Whenever notice is required to be given under this Warrant, including, without limitation, an Exercise Notice, unless otherwise provided herein, such notice shall be given in writing, (i) if delivered (a) from within the domestic United States, by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, electronic mail or by facsimile or (b) from outside the United States, by International Federal Express, electronic mail or facsimile, and (ii) will be deemed given (A) if delivered by first-class registered or certified mail domestic, three (3) Business Days after so mailed, (B) if delivered by nationally recognized overnight carrier, one (1) Business Day after so mailed, (C) if delivered by International Federal Express, two (2) Business Days after so mailed and (D) at the time of transmission, if delivered by electronic mail to the email address specified in this Section 6 prior to 5:00 p.m. (New York time) on a Trading Day, (E) the next Trading Day after the date of transmission, if delivered by electronic mail to the email address specified in this Section 7 on a day that is not a Trading Day or later than 5:00 p.m. (New York time) on any Trading Day and (F) if delivered by facsimile, upon electronic confirmation of delivery of such facsimile, and will be delivered and addressed as follows:

(i) If to the Company, to:

Idera Pharmaceuticals, Inc.
505 Eagleview Blvd., Suite 212
Exton, Pennsylvania 19341
Attn: Chief Financial Officer

with copies to:

Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, Pennsylvania 19103-2921
Attn: Joanne R. Soslow, Esq.
Email: kdeschaine@cooley.com

(ii) if to the Holder, at such address or other contact information delivered by the Holder to Company or as is on the books and records of the Company.

The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) immediately upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation; provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder; provided, further, that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice.

7. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended or waived and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

8. GOVERNING LAW; JURY TRIAL. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

9. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via facsimile or electronic mail within two (2) Business Days of receipt of the Exercise Notice or other event giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via facsimile or electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

10. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and any other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the holder of this Warrant shall be entitled, in addition to all other available remedies, to seek an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

11. TRANSFER. Subject to compliance with applicable federal and state securities laws, this Warrant and the Warrant Shares may be offered for sale, sold, transferred, pledged or assigned without the consent of the Company.

12. SEVERABILITY; CONSTRUCTION; HEADINGS. If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s). This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

13. DISCLOSURE. Upon receipt or delivery by the Company of any notice in accordance with the terms of this Warrant, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries, the Company shall contemporaneously with any such receipt or delivery publicly disclose such material, nonpublic information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, nonpublic information relating to the Company or its subsidiaries, the Company so shall indicate to such Holder contemporaneously with delivery of such notice, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries.

14. CERTAIN DEFINITIONS. For purposes of this Warrant, the following terms shall have the following meanings:

(a) “**Affiliate**” means any person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person, as such terms are used in and construed under Rule 405 under the Securities Act.

(b) “**Attribution Parties**” means, collectively, the Holder (together with the Holder’s Affiliates, and any other persons acting as a group together with the Holder or any of the Holder’s Affiliates. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(c) “**Bid Price**” means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported in the “pink sheets” by OTC Markets Group Inc. (formerly Pink Sheets LLC) as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 9. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

(d) “**Black Scholes Value**” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg determined as of the day immediately following the first public announcement of the applicable Change of Control, or, if the Change of Control is not publicly announced, the date the Change of Control is consummated, for pricing purposes and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of this Warrant as of such date of request, (ii) an expected volatility equal to 60%, (iii) the underlying price per share used in such calculation shall be the greater of (A) the sum of the price per share being offered in cash, if any, plus the per share value of any non-cash consideration, if any, being offered in such Change of Control and (B) the greater of (x) the last Weighted Average Price immediately prior to the public announcement of such Change of Control and (y) the last Weighted Average Price immediately prior to the consummation of such Change of Control, (iv) a zero cost of borrow and (v) a 360 day annualization factor.

(e) “**Bloomberg**” means Bloomberg Financial Markets.

(f) “**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(g) “**Change of Control**” means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respects, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or (iii) a merger in connection with a bona fide acquisition by the Company of any Person in which (x) the gross consideration paid, directly or indirectly, by the Company in such acquisition is not greater than 20% of the Company’s market capitalization as calculated on the date of the consummation of such merger and (y) such merger does not contemplate a change to the identity of a majority of the board of directors of the Company. Notwithstanding anything herein to the contrary, any transaction or series of transactions that, directly or indirectly, results in the Company or the Successor Entity not having Common Stock or common stock, as applicable, registered under the Exchange Act and listed on an Eligible Market shall be deemed a Change of Control.

(h) “**Closing Bid Price**” and “**Closing Sale Price**” means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price, as the case may be, of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 9. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

(i) “**Common Stock**” means (i) the Company’s Common Stock, par value \$0.001 per share, and (ii) any capital stock into which such Common Stock shall have been changed or any capital stock resulting from a reclassification of such Common Stock.

(j) “**Convertible Securities**” means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(k) “**Eligible Market**” means The Nasdaq Capital Market, the NYSE American LLC, The Nasdaq Global Select Market, The Nasdaq Global Market or The New York Stock Exchange, Inc.

(l) “**Exercise Price**” means (x) \$[]³ per share of Common Stock if the Warrant Shares shall be shares of Common Stock or (y) \$[]⁴ per share of Series B1 Preferred Stock if the Warrant Shares shall be shares of Series B1 Preferred Stock, in each case, subject to adjustment as provided herein.

(m) “**Fundamental Transaction**” means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the Exchange Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the Exchange Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Subscription Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition which may be defective or inconsistent with the intended treatment of such instrument or transaction.

³ For the Series B1 and Series B2 Warrants, the exercise price is the lesser of the closing price and the average closing price for 5 prior trading days as of the date that the purchase agreement is signed (the “Reference Price”). For the Series B3 and Series B4 Warrants, the exercise price is 120% of the Reference Price.

⁴ 100x the applicable Common Stock exercise price.

(n) “**Group**” means a “group” as that term is used in Section 13(d) of the Exchange Act and as defined in Rule 13d-5 thereunder.

(o) “**Options**” means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(p) “**Parent Entity**” of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction.

(q) “**Person**” means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(r) “**Principal Market**” means the Nasdaq Capital Market.

(s) “**Series B1 Preferred Stock**” means (i) the Company’s Series B1 Convertible Preferred Stock, par value \$0.01 per share, and (ii) any capital stock into which such Series B1 Preferred Stock shall have been changed or any capital stock resulting from a reclassification of such capital stock.

(t) “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, for the Company’s primary trading market or quotation system with respect to the Common Stock that is in effect on the date of delivery of an applicable Exercise Notice.

(u) “**Subject Entity**” means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(v) “**Successor Entity**” means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(w) “**Trading Day**” means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

(x) “**Transaction Documents**” means any agreement entered into by and between the Company and the Holder, as applicable.

(y) “**Warrant Shares**” means [()] shares of fully paid non-assessable shares of Common Stock (as defined below); *provided that*, at the option of the Holder, from and after the [Series B1 Transition Date] [Series B2 Transition Date] [Series B3 Transition Date] [Series B4 Transition Date] (as such term is defined in that certain Certificate of Designations, Preferences and Rights of Series B1 Convertible Preferred Stock, Series B2 Convertible Preferred Stock, Series B3 Convertible Preferred Stock and Series B4 Convertible Preferred Stock of Idera Pharmaceuticals, Inc. filed with the Secretary of State of the State of Delaware on or about December [], 2019), if the Holder provides an irrevocable notice of election of such option to the Company, “**Warrant Shares**” shall mean [()]⁵ shares of fully paid non-assessable shares of Series B1 Preferred Stock (as defined below), each subject to adjustment as provided herein.

(z) “**Weighted Average Price**” means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported by Bloomberg through its “Volume at Price” function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 9 but with the term “Weighted Average Price” being substituted for the term “Exercise Price.” All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

⁵ 1/100th of shares.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Warrant to Purchase Common Stock or Series B1 Preferred Stock to be duly executed as of the Issuance Date set out above.

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

EXERCISE NOTICE

TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS WARRANT TO
PURCHASE COMMON STOCK OR SERIES B1 PREFERRED STOCK

IDERA PHARMACEUTICALS, INC.

 COMMON STOCK

The undersigned holder hereby exercises the right to purchase _____ shares of Common Stock (“**Warrant Shares**”) of Idera Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), evidenced by the attached Warrant to Purchase Common Stock or Series B1 Preferred Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as:

- “Cash Exercise” with respect to _____ Warrant Shares; and/or
- “Cashless Exercise” with respect to _____ Warrant Shares

Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$ _____ to the Company in accordance with the terms of the Warrant.

Delivery of Warrant Shares. The Company shall deliver to the holder _____ shares of Common Stock in accordance with the terms of the Warrant.

 SERIES B1 PREFERRED STOCK

The undersigned holder hereby exercises the right to purchase _____ shares of Series B1 Preferred Stock (“**Warrant Shares**”) of Idera Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), evidenced by the attached Warrant to Purchase Common Stock or Series B1 Preferred Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

Payment of Exercise Price. The holder shall pay the Aggregate Exercise Price in the sum of \$ _____ to the Company in accordance with the terms of the Warrant.

Delivery of Warrant Shares. The Company shall deliver to the holder
Warrant.

shares of Series B1 Preferred Stock in accordance with the terms of the

Date:

Name of Registered Holder

By: _____
Name:
Title:

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs [Transfer Agent] to issue the above indicated number of Warrant Shares on or prior to the applicable Share Delivery Date.

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this "**Agreement**") is made and entered into as of December 23, 2019 (the "**Effective Date**") by and among Idera Pharmaceuticals, Inc., a Delaware corporation (the "**Company**"), and the purchasers listed on the signature pages hereto (each a "**Purchaser**" and together the "**Purchasers**"). Certain terms used and not otherwise defined in the text of this Agreement are defined in Section 11 hereof.

RECITALS

WHEREAS, the Company and the Purchasers are executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by Section 4(a)(2) of the Securities Act of 1933, as amended (the "**1933 Act**"), and Rule 506 of Regulation D promulgated by the United States Securities and Exchange Commission (the "**Commission**") under the 1933 Act; and

WHEREAS, the Company desires to sell to the Purchasers, and the Purchasers desire to purchase from the Company, (i) shares of Series B1 Convertible Preferred Stock, par value \$0.01 per share (the "**Series B1 Preferred Stock**"), having the relative rights, preferences, limitations and powers set forth in the Certificate of Designations, Preferences and Rights of Series B1 Convertible Preferred Stock, Series B2 Convertible Preferred Stock, Series B3 Convertible Preferred Stock and Series B4 Convertible Preferred Stock in the form attached hereto as Exhibit A (the "**Certificate of Designations**"), (ii) shares of Series B2 Convertible Preferred Stock, par value \$0.01 per share (the "**Series B2 Preferred Stock**"), having the relative rights, preferences, limitations and powers set forth in the Certificate of Designations, (iii) shares of Series B3 Convertible Preferred Stock, par value \$0.01 per share (the "**Series B3 Preferred Stock**"), having the relative rights, preferences, limitations and powers set forth in the Certificate of Designations, (iv) shares of Series B4 Convertible Preferred Stock, par value \$0.01 per share (the "**Series B4 Preferred Stock**"), having the relative rights, preferences, limitations and powers set forth in the Certificate of Designations and (v) warrants in the form attached hereto as Exhibit B (the "**Warrants**") to purchase (A) shares of the Company's common stock, par value \$0.001 per share (the "**Common Stock**") or (B) upon the satisfaction of certain conditions set forth therein, shares of Series B1 Preferred Stock, in accordance with the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the mutual representations, warranties and covenants herein contained, the parties hereto hereby agree as follows:

SECTION 1. Authorization of Securities; Payment of Option Fee.

1.01 The Company has authorized the sale and issuance of shares of Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and Warrants on the terms and subject to the conditions set forth in this Agreement. The shares of Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and Warrants sold hereunder at the Closings (as defined below) shall be referred to as the "**Securities**."

1.02 On the First Closing Date, each Purchaser will pay the option fee set forth opposite such Purchaser's name on Schedule I hereto (the "**Schedule of Purchasers**"), which represents \$0.125 for each share of Common Stock underlying (i) the Series B2 Preferred Stock and accompanying Warrants, (ii) the Series B3 Preferred Stock and accompanying Warrants and (iii) Series B4 Preferred Stock and accompanying Warrants issuable hereunder (the "**Option Fee**"). In the event the Company does not receive the Required Shareholder Approval on or prior to December 31, 2020, the Option Fee shall be returned to the Purchasers within five Business Days after such date.

SECTION 2. Sale and Purchase of the Securities.

2.01 First Closing Securities. Upon the terms and subject to the conditions herein contained, the Company agrees to sell to each Purchaser, and each Purchaser agrees to purchase from the Company, that number of Securities set forth opposite such Purchaser's name on the Schedule of Purchasers under the heading "First Closing" (the "**First Closing Shares**") for the purchase price to be paid by each Purchaser set forth opposite such Purchaser's name on the Schedule of Purchasers, for aggregate gross proceeds of \$3,896,018. The Series B1 Preferred Stock shall have a stated value of \$152 per share of Series B1 Preferred Stock and shall be convertible into Series B1 Preferred Conversion Shares at a conversion price equal to \$1.52 per Series B1 Preferred Conversion Share, subject to adjustment as provided in the Certificate of Designations. The Warrants accompanying the Series B1 Preferred Stock shall be exercisable for 2,368,400 Common Warrant Shares and shall have an exercise price of \$1.52 per Common Warrant Share (or, if the holder elects to exercise the Warrants for Series B1 Preferred Warrant Shares, \$152 per Series B1 Preferred Warrant Share), subject to adjustment as provided in the Warrants.

2.02 Second Closing Securities. Upon the terms and subject to the conditions herein contained, the Company agrees to sell to each Purchaser, and each Purchaser agrees to purchase from the Company at one or more Closings, that number of Securities set forth opposite such Purchaser's name on the Schedule of Purchasers under the heading "Second Closing" (the "**Second Closing Shares**") for the purchase price to be paid by each Purchaser set forth opposite such Purchaser's name on the Schedule of Purchasers, for aggregate gross proceeds of \$15,000,120. The Series B2 Preferred Stock shall have a stated value of \$152 per share of Series B2 Preferred Stock and shall be convertible into Series B2 Preferred Conversion Shares at a conversion price equal to \$1.52 per Series B2 Preferred Conversion Share, subject to adjustment as provided in the Certificate of Designations. The Warrants accompanying the Series B2 Preferred Stock shall be exercisable for 9,868,500 Common Warrant Shares and shall have an exercise price of \$1.52 per Common Warrant Share (or, if the holder elects to exercise the Warrants for Series B1 Preferred Warrant Shares, \$152 per Series B1 Preferred Warrant Share), subject to adjustment as provided in the Warrants.

2.03 Third Closing Securities. Upon the terms and subject to the conditions herein contained, the Company agrees to sell to each Purchaser, and each Purchaser agrees to purchase from the Company at the Third Closing, that number of Securities set forth opposite such Purchaser's name on the Schedule of Purchasers under the heading "Third Closing" (the "**Third Closing Shares**") for the purchase price to be paid by each Purchaser set forth opposite such Purchaser's name on the Schedule of Purchasers, for aggregate gross proceeds of \$15,000,076. The Series B3 Preferred Stock shall have a stated value of \$182 per share of Series B3 Preferred Stock and shall be convertible into Series B3 Preferred Conversion Shares at a conversion price equal to \$1.82 per Series B3 Preferred Conversion Share, subject to adjustment as provided in the Certificate of Designations. The Warrants accompanying the Series B3 Preferred Stock shall be exercisable for 6,593,440 Common Warrant Shares and shall have an exercise price of \$1.82 per Common Warrant Share (or, if the holder elects to exercise the Warrants for Series B1 Preferred Warrant Shares, \$182 per Series B1 Preferred Warrant Share), subject to adjustment as provided in the Warrants.

2.04 Fourth Closing Securities. Upon the terms and subject to the conditions herein contained, the Company agrees to sell to each Purchaser, and each Purchaser agrees to purchase from the Company at the Fourth Closing, that number of Securities set forth opposite such Purchaser's name on the Schedule of Purchasers under the heading "Fourth Closing" (the "**Fourth Closing Shares**") for the purchase price to be paid by each Purchaser set forth opposite such Purchaser's name on the Schedule of Purchasers, for aggregate gross proceeds of \$15,000,076. The Series B4 Preferred Stock shall have a stated value of \$182 per share of Series B4 Preferred Stock and shall be convertible into Series B4 Preferred Conversion Shares at a conversion price equal to \$1.82 per Series B4 Preferred Conversion Share, subject to adjustment as provided in the Certificate of Designations. The Warrants accompanying the Series B4 Preferred Stock shall be exercisable for 6,593,440 Common Warrant Shares and shall have an exercise price of \$1.82 per Common Warrant Share (or, if the holder elects to exercise the Warrants for Series B1 Preferred Warrant Shares, \$182 per Series B1 Preferred Warrant Share), subject to adjustment as provided in the Warrants.

2.05 At or prior to each Closing, each Purchaser will pay the applicable purchase price set forth opposite such Purchaser's name on the Schedule of Purchasers (or, in the case of a Partial Closing as set forth in the applicable partial closing notice) by wire transfer of immediately available funds in accordance with wire instructions provided by the Company to the Purchasers prior to the Closing.

2.06 If any Purchaser fails to purchase all of the First Closing Shares and Second Closing Shares set forth opposite such Purchaser's name on the Schedule of Purchasers at the First Closing and Second Closing, or in the case of a Partial Closing, the number of Second Closing Shares allocated to such Purchaser in the Partial/Second Closing Notice (such Purchaser, a "**Failing Purchaser**"), then, effective immediately upon such Partial Closing or Second Closing, as applicable, such Failing Purchaser's right to purchase Securities in the Third Closing and Fourth Closing and any subsequent Partial Closing or Second Closing, if any, shall terminate and be of no further effect and any Warrants issued to such Failing Purchaser pursuant to this Agreement shall terminate and be of no further effect. If any Failing Purchaser fails to purchase all of the Third Closing Shares set forth opposite such Purchaser's name on the Schedule of Purchasers at the Third Closing, or in the case of a Partial Closing, the number of Third Closing Shares allocated to such Purchaser in the Partial/Third Closing Notice, then, effective immediately upon such Partial Closing or Third Closing, as applicable, such Failing Purchaser's right to purchase Securities in the Fourth Closing and any subsequent Partial Closing or Third Closing, if any, shall terminate and be of no further effect and any Warrants issued to such Failing Purchaser pursuant to this Agreement shall terminate and be of no further effect.

SECTION 3. Closings. Subject to the satisfaction of the closing conditions set forth in Section 7:

3.01 the closing with respect to the transactions contemplated in Section 2.01 hereof (the “**First Closing**”) shall occur upon the satisfaction of the closing conditions set forth in Section 7 (the “**First Closing Date**”); and

3.02 the closing(s) with respect to the transactions contemplated in Section 2.02 hereof, shall occur at the BBA Purchasers’ sole and absolute discretion. The BBA Purchasers may elect to close in one, two or three Closings (any Closing that is for less than all of the then-remaining Second Closing Shares, is referred to herein as a “**Partial Closing**” and the Closing at which all of the Second Closing Shares are issued, including any issuances at prior Partial Closings, if any, is referred to herein as the “**Second Closing**”) at any time following the Company’s filing of an amendment to its Certificate of Incorporation with the Secretary of State of the State of Delaware to effect the Required Shareholder Approval (such filing date being referred to herein as the “**Trigger Date**”) and prior to the later of (i) the 9-month anniversary of the Trigger Date and (ii) the tenth Business Day following the ORR Data Announcement (the “**Second Closing Outside Date**”). In the case of a Partial Closing, each Purchaser shall purchase its percentage of its Second Closing Shares that is equal to the percentage of the aggregate number of Second Closing Shares being issued and purchased at such Partial Closing. Each of the Partial Closings, if any, and the Second Closing shall be held on or before the fifth day following delivery of written notice (the “**Partial/Second Closing Notice**”) by BBA Purchasers to the Company and the other Purchasers (the “**Partial Closing Date**” or “**Second Closing Date**”, as the case may be), or at such other date as the Company and BBA Purchasers may agree, remotely via the exchange of documents and signatures, which Partial/Second Closing Notice shall set forth the applicable Partial Closing Date or Second Closing Date and, in the case of a Partial Closing, the aggregate number of Second Closing Shares to be issued in such Partial Closing and the number of Second Closing Shares to be purchased by each Purchaser and the applicable purchase price for each Purchaser in such Partial Closing; and

3.03 the closing(s) with respect to the transactions contemplated in Section 2.03 hereof, shall occur at the BBA Purchasers’ sole and absolute discretion. The BBA Purchasers may elect to close in one, two or three Closings (the Closing at which all of the Third Closing Shares are issued, including any issuances at prior Partial Closings, if any, is referred to herein as the “**Third Closing**”) at any time following the Trigger Date and prior to the 15-month anniversary of the Trigger Date (the “**Third Closing Outside Date**”). In the case of a Partial Closing, each Purchaser shall purchase its percentage of its Third Closing Shares that is equal to the percentage of the aggregate number of Third Closing Shares being issued and purchased at such Partial Closing. Each of the Partial Closings, if any, and the Third Closing shall be held on or before the fifth day following delivery of written notice (the “**Partial/Third Closing Notice**”) by BBA Purchasers to the Company and the other Purchasers (the “**Partial Closing Date**” or “**Third Closing Date**”, as the case may be), or at such other date as the Company and BBA Purchasers may agree, remotely via the exchange of documents and signatures, which Partial/Third Closing Notice shall set forth the applicable Partial Closing Date or Third Closing Date and, in the case of a Partial Closing, the aggregate number of Third Closing Shares to be issued in such Partial Closing and the number of Third Closing Shares to be purchased by each Purchaser and the applicable purchase price for each Purchaser in such Partial Closing; and

3.04 except as set forth below, the closing(s) with respect to the transactions contemplated in Section 2.04 hereof, shall occur at the BBA Purchasers' sole and absolute discretion. The BBA Purchasers may elect to close in one, two or three Closings (the Closing at which all of the Fourth Closing Shares are issued, including any issuances at prior Partial Closings, if any, is referred to herein as the "**Fourth Closing**" and, together with the First Closing, the Second Closing and the Third Closing, the "**Closings**" and each a "**Closing**") at any time following the Trigger Date and prior to the 21-month anniversary of the Trigger Date (the "**Fourth Closing Outside Date**"); provided, however, that if at any time following the Third Closing Date, the Company's Common Stock has achieved a closing price on the Principal Trading Market of at least \$7.60 for twenty (20) days out of any thirty (30) consecutive day period (the "**Achievement Date**") the Company may elect to terminate the BBA Purchasers' right to purchase Fourth Closing Shares that were not issued and sold prior to the Achievement Date. In the case of a Partial Closing, each Purchaser shall purchase its percentage of its Fourth Closing Shares that is equal to the percentage of the aggregate number of Fourth Closing Shares being issued and purchased at such Partial Closing. Each of the Partial Closings, if any, and the Fourth Closing shall be held on or before the fifth day following delivery of written notice (the "**Partial/Fourth Closing Notice**") by BBA Purchasers to the Company and the other Purchasers (the "**Partial Closing Date**" or "**Fourth Closing Date**", as the case may be and, together with the First Closing Date, the Second Closing Date and the Third Closing Date, the "**Closing Dates**" and each a "**Closing Date**"), or at such other date as the Company and BBA Purchasers may agree, remotely via the exchange of documents and signatures, which Partial/Fourth Closing Notice shall set forth the applicable Partial Closing Date or Fourth Closing Date and, in the case of a Partial Closing, the aggregate number of Fourth Closing Shares to be issued in such Partial Closing and the number of Fourth Closing Shares to be purchased by each Purchaser and the applicable purchase price for each Purchaser in such Partial Closing; and

3.05 notwithstanding the foregoing, if at any time after the Trigger Date, the Company does not have a number of authorized but unissued shares of Common Stock equal to at least the number of Conversion Shares and the Common Warrant Shares (without taking into account any limitations on conversion of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock and Series B4 Preferred Stock set forth in the Certificate of Designations or limitations on exercise of the Warrants set forth in the Warrants) (an "**Authorized Share Failure**"), then the Second Closing Outside Date, the Third Outside Closing Date and the Fourth Closing Outside Date shall be extended for such number of days equal to the number of days such Authorized Share Failure remained in effect.

SECTION 4. Representations and Warranties of the Purchasers. Each Purchaser, severally and not jointly, represents and warrants to the Company that the statements contained in this Section 4 are true and correct as of the Effective Date, and will be true and correct as of each Closing Date:

4.01 Validity. The execution, delivery and performance of this Agreement and the consummation by the Purchaser of the transactions contemplated hereby have been duly authorized by all necessary corporate, partnership, limited liability or similar actions, as applicable, on the part of such Purchaser. This Agreement has been duly executed and delivered by the Purchaser and constitutes a valid and binding obligation of the Purchaser, enforceable against it in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

4.02 Brokers. There is no broker, investment banker, financial advisor, finder or other person which has been retained by or is authorized to act on behalf of the Purchaser who might be entitled to any fee or commission for which the Company will be liable in connection with the execution of this Agreement and the consummation of the transactions contemplated hereby.

4.03 Investment Representations and Warranties. The Purchaser understands and agrees that the offering and sale of the Securities has not been registered under the 1933 Act or any applicable state securities laws and is being made in reliance upon federal and state exemptions for transactions not involving a public offering which depend upon, among other things, the bona fide nature of the investment intent and the accuracy of the Purchaser's representations as expressed herein.

4.04 Acquisition for Own Account; No Control Intent. The Purchaser is acquiring the Securities for its own account for investment and not with a view towards distribution in a manner which would violate the 1933 Act or any applicable state or other securities laws. The Purchaser is not party to any agreement providing for or contemplating the distribution of any of the Securities. The Purchaser has no present intent to effect a "change of control" of the Company as such term is understood under the rules promulgated pursuant to Section 13(d) of the 1934 Act.

4.05 No General Solicitation. The Purchaser is not purchasing the Securities as a result of any advertisement, article, notice or other communication regarding the Securities published in any newspaper, magazine or similar media or broadcast over television, radio or the internet or presented at any seminar or any other general solicitation or general advertisement. The purchase of the Securities has not been solicited by or through anyone other than the Company.

4.06 Ability to Protect Its Own Interests and Bear Economic Risks. The Purchaser has the capacity to protect its own interests in connection with the transactions contemplated by this Agreement and is capable of evaluating the merits and risks of the investment in the Securities. The Purchaser is able to bear the economic risk of an investment in the Securities and is able to sustain a loss of all of its investment in the Securities without economic hardship, if such a loss should occur.

4.07 Accredited Investor; No Bad Actor. The Purchaser is an "accredited investor" as that term is defined in Rule 501(a) under the 1933 Act. Such Purchaser has not taken any of the actions set forth in, and is not subject to, the disqualification provisions of Rule 506(d)(1) of the 1933 Act.

4.08 Access to Information. The Purchaser has been given access to Company documents, records, and other information, and has had adequate opportunity to ask questions of, and receive answers from, the Company's officers, employees, agents, accountants and representatives concerning the Company's business, operations, financial condition, assets, liabilities and all other matters relevant to its investment in the Securities. Purchaser understands that an investment in the Securities bears significant risk and represents that it has reviewed the SEC Reports, which serve to qualify certain of the Company representations set forth below.

4.09 Restricted Securities. The Purchaser understands that the Securities will be characterized as "restricted securities" under the federal securities laws inasmuch as they are being acquired from the Company in a private placement under Section 4(a)(2) of the 1933 Act and that under such laws and applicable regulations such Securities may be resold without registration under the 1933 Act only in certain limited circumstances.

4.11 Short Sales. Between the time the Purchaser learned about the offering contemplated by this Agreement and the public announcement of the offering, the Purchaser has not engaged in any short sales (as defined in Rule 200 of Regulation SHO under the 1934 Act ("**Short Sales**")) or similar transactions with respect to the Common Stock or any securities exchangeable or convertible for Common Stock, nor has the Purchaser, directly or indirectly, caused any person to engage in any Short Sales or similar transactions with respect to the Common Stock.

4.12 Tax Advisors. The Purchaser has had the opportunity to review with the Purchaser's own tax advisors the federal, state and local tax consequences of its purchase of the Securities set forth opposite such Purchaser's name on the Schedule of Purchasers, where applicable, and the transactions contemplated by this Agreement. The Purchaser is relying solely on the Purchaser's own determination as to tax consequences or the advice of such tax advisors and not on any statements or representations of the Company or any of its agents and understands that the Purchaser (and not the Company) shall be responsible for the Purchaser's own tax liability that may arise as a result of the transactions contemplated by this Agreement.

SECTION 5. Representations and Warranties by the Company. Assuming the accuracy of the representations and warranties of the Purchasers set forth in Section 4 and except as set forth in the reports, schedules, forms, statements and other documents filed by the Company with the United States Securities and Exchange Commission (the "**Commission**") pursuant to the 1934 Act (collectively, the "**SEC Reports**"), which disclosures serve to qualify these representations and warranties in their entirety, the Company represents and warrants to the Purchasers that the statements contained in this Section 5 are true and correct as of the Effective Date, and will be true and correct as of each Closing Date:

5.01 SEC Reports. The Company has timely filed all of the reports, schedules, forms, statements and other documents required to be filed by the Company with the Commission pursuant to the reporting requirements of the 1934 Act. The SEC Reports, at the time they were filed with the Commission, (i) complied as to form in all material respects with the requirements of the 1934 Act and the 1934 Act Regulations and (ii) did not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

5.02 Independent Accountants. The accountants who certified the audited consolidated financial statements of the Company included in the SEC Reports are independent public accountants as required by the 1933 Act, the 1933 Act Regulations, the 1934 Act and the 1934 Act Regulations, and the Public Company Accounting Oversight Board.

5.03 Financial Statements; Non-GAAP Financial Measures. The consolidated financial statements included or incorporated by reference in the SEC Reports, together with the related notes, present fairly, in all material respects, the financial position of the Company and its consolidated subsidiaries at the dates indicated and the statement of operations, stockholders' equity and cash flows of the Company and its consolidated subsidiaries for the periods specified; said financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("**GAAP**") applied on a consistent basis throughout the periods involved, except in the case of unaudited, interim financial statements, subject to normal year-end audit adjustments and the exclusion of certain footnotes.

5.04 No Material Adverse Change in Business. Except as otherwise stated therein, since the respective dates as of which information is given in the SEC Reports, there has been no material adverse change in the condition, financial or otherwise, or in the earnings, business affairs or business prospects of the Company and its subsidiaries considered as one enterprise, whether or not arising in the ordinary course of business (a "**Material Adverse Effect**"), there have been no transactions entered into by the Company or any of its subsidiaries, other than those in the ordinary course of business and except as contemplated in this Agreement, which are material with respect to the Company and its subsidiaries considered as one enterprise, and there has been no dividend or distribution of any kind declared, paid or made by the Company on any class of its capital stock.

5.05 Good Standing of the Company. The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the State of Delaware and has corporate power and authority to own, lease and operate its properties and to conduct its business as disclosed in the SEC Reports and to enter into and perform its obligations under this Agreement; and the Company is duly qualified as a foreign corporation to transact business and is in good standing in each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or to be in good standing would not result in a Material Adverse Effect.

5.06 Good Standing of Subsidiaries. Each "significant subsidiary" of the Company, as such term is defined in Rule 1-02 of Regulation S-X (each, a "**Subsidiary**" and, collectively, the "**Subsidiaries**") has been duly incorporated or organized and is validly existing in good standing under the laws of the jurisdiction of its incorporation or organization, has corporate or similar power and authority to own, lease and operate its properties and to conduct its business as described in the SEC Reports and is duly qualified to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or to be in good standing would not result in a Material Adverse Effect. All of the issued and outstanding capital stock of each Subsidiary has been duly authorized and validly issued, is fully paid and non-assessable and is owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance, claim or equity. None of the outstanding shares of capital stock of any Subsidiary were issued in violation of the preemptive or similar rights of any securityholder of such Subsidiary.

5.07 Capitalization. The Company has an authorized capitalization as set forth in the SEC Reports. The outstanding shares of capital stock of the Company have been duly authorized and validly issued and are fully paid and non-assessable. None of the outstanding shares of capital stock of the Company were issued in violation of the preemptive or other similar rights of any securityholder of the Company which have not been waived.

5.08 Validity. This Agreement has been duly authorized, executed and delivered by the Company and constitutes a valid and binding obligation of the Company, enforceable against it in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

5.09 Authorization and Description of Securities. Upon the filing of the Certificate of Designations with the Secretary of State of the State of Delaware, the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and the Series B1 Preferred Warrant Shares will have been duly and validly authorized and, when issued and paid for pursuant to this Agreement (in the case of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock and Series B4 Preferred Stock) or pursuant to this Agreement and the Warrants (in the case of the Series B1 Preferred Warrant Shares), will be validly issued, fully paid and nonassessable, and shall be free and clear of all encumbrances and restrictions, except for restrictions on transfer set forth in this Agreement or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights of stockholders. Upon the due conversion of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and the Series B1 Preferred Warrant Shares, the applicable Conversion Shares will be validly issued, fully paid and non-assessable free and clear of all encumbrances and restrictions, except for restrictions on transfer set forth in this Agreement or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights of stockholders. The Warrants have been duly authorized and, when issued and paid for in accordance with the terms of this Agreement, will be duly and validly issued, free and clear of all encumbrances and restrictions, except for restrictions on transfer set forth in this Agreement or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights of stockholders. The Common Warrant Shares issuable upon exercise of the Warrants have been duly authorized and, when issued and paid for in accordance with the terms of this Agreement and the Warrants, will be duly and validly issued, fully paid and nonassessable, free and clear of all encumbrances and restrictions, except for restrictions on transfer set forth in this Agreement or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights of stockholders. The Common Stock conforms, in all material respects, to all statements relating thereto contained in the SEC Reports and such description conforms, in all material respects, to the rights set forth in the instruments defining the same. No holder of Securities, Conversion Shares or Warrant Shares will be subject to personal liability solely by reason of being such a holder.

5.10 Absence of Violations, Defaults and Conflicts. Neither the Company nor any of its subsidiaries is (A) in violation of its charter, bylaws or similar organizational document, except, in the case of the Company's subsidiaries, for such violations that would not, singly or in the aggregate, result in a Material Adverse Effect, (B) in default in the performance or observance of any obligation, agreement, covenant or condition contained in any contract, indenture, mortgage, deed of trust, loan or credit agreement, note, lease or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which it or any of them may be bound or to which any of the properties or assets of the Company or any subsidiary is subject (collectively, "**Agreements and Instruments**"), except for such defaults that would not, singly or in the aggregate, result in a Material Adverse Effect, or (C) in violation of any law, statute, rule, regulation, judgment, order, writ or decree of any arbitrator, court, governmental body, regulatory body, administrative agency or other authority, body or agency having jurisdiction over the Company or any of its subsidiaries or any of their respective properties, assets or operations (each, a "**Governmental Entity**"), except for such violations that would not, singly or in the aggregate, result in a Material Adverse Effect. The execution, delivery and performance of this Agreement and the consummation of the transactions contemplated herein (including the issuance and sale of the Securities, the Conversion Shares and the Warrant Shares) and compliance by the Company with its obligations hereunder do not and will not, whether with or without the giving of notice or passage of time or both, conflict with or constitute a breach of, or default or Repayment Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any properties or assets of the Company or any subsidiary pursuant to, the Agreements and Instruments (except for such conflicts, breaches, defaults or Repayment Events or liens, charges or encumbrances that would not, singly or in the aggregate, result in a Material Adverse Effect), nor will such action result in any violation of (i) the provisions of the certificate of incorporation, bylaws or similar organizational document of the Company or any of its subsidiaries or (ii) any applicable law, statute, rule, regulation, judgment, order, writ or decree of any Governmental Entity, except in the case of clause (ii) for such violations as would not, singly or in the aggregate, result in a Material Adverse Effect. As used herein, a "**Repayment Event**" means any event or condition which gives the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.

5.11 Absence of Labor Dispute. No labor dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is imminent, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its or any subsidiary's principal suppliers, manufacturers, customers or contractors, which, in either case, would result in a Material Adverse Effect.

5.12 Absence of Proceedings. There is no action, suit, proceeding, inquiry or investigation before or brought by any Governmental Entity now pending or, to the knowledge of the Company, threatened, against or affecting the Company or any of its subsidiaries, which would reasonably be expected to result in a Material Adverse Effect, or which would reasonably be expected to materially and adversely affect the consummation of the transactions contemplated in this Agreement or the performance by the Company of its obligations hereunder.

5.13 Absence of Further Requirements. No filing with, or authorization, approval, consent, license, order, registration, qualification or decree of, any Governmental Entity is necessary or required for the performance by the Company of its obligations hereunder, in connection with the offering, issuance, or sale of the Securities hereunder or the consummation of the transactions contemplated by this Agreement, except such as have been already obtained or as may be required to list the Series B1 Preferred Conversion Shares, the Series B2 Preferred Conversion Shares, the Series B3 Preferred Conversion Shares, the Series B4 Preferred Conversion Shares and the Common Warrant Shares on the Principal Trading Market, as may be required under state securities laws or the filings required pursuant to Section 6.03 of this Agreement.

5.14 Possession of Licenses and Permits. The Company and its subsidiaries possess such permits, licenses, approvals, consents and other authorizations (collectively, “**Governmental Licenses**”) issued by the appropriate Governmental Entities necessary to conduct the business now operated by them, except where the failure so to possess would not, singly or in the aggregate, result in a Material Adverse Effect. The Company and its subsidiaries are in compliance with the terms and conditions of all Governmental Licenses, except where the failure so to comply would not, singly or in the aggregate, result in a Material Adverse Effect. All of the Governmental Licenses are valid and in full force and effect, except when the invalidity of such Governmental Licenses or the failure of such Governmental Licenses to be in full force and effect would not, singly or in the aggregate, result in a Material Adverse Effect. Neither the Company nor any of its subsidiaries has received any notice of proceedings relating to the revocation or modification of any Governmental Licenses which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would result in a Material Adverse Effect.

5.15 Title to Property. The Company and its subsidiaries do not own any real property. The Company and its subsidiaries have title to all tangible personal property owned by them, in each case, free and clear of all mortgages, pledges, liens, security interests, claims, restrictions or encumbrances of any kind except such as (A) are described in the SEC Reports or (B) do not, singly or in the aggregate, materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company or any of its subsidiaries; and all of the leases and subleases material to the business of the Company and its subsidiaries, considered as one enterprise, and under which the Company or any of its subsidiaries holds properties described in the SEC Reports, are in full force and effect, and neither the Company nor any such subsidiary has any notice of any material claim of any sort that has been asserted by anyone adverse to the rights of the Company or any subsidiary under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company or such subsidiary to the continued possession of the leased or subleased premises under any such lease or sublease.

5.16 Intellectual Property. The Company and its subsidiaries own or possess the right to use all patents, patent applications, inventions, licenses, know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information or procedures), trademarks, service marks, trade names, domain names, copyrights, and other intellectual property, and registrations and applications for registration of any of the foregoing (collectively, “**Intellectual Property**”) necessary to conduct their business as presently conducted and currently contemplated to be conducted in the future as described in the SEC Reports and, to the knowledge of the Company, neither the Company nor any of its subsidiaries, whether through their respective products and services or the conduct of their respective businesses, has infringed, misappropriated, conflicted with or otherwise violated, or is currently infringing, misappropriating, conflicting with or otherwise violating, and none of the Company or its subsidiaries have received any heretofore unresolved communication or notice of infringement of, misappropriation of, conflict with or violation of, any Intellectual Property of any other person or entity, other than as described in the SEC Reports. Neither the Company nor any of its subsidiaries has received any communication or notice (in each case that has not been resolved) alleging that by conducting their business as described in the SEC Reports, such parties would infringe, misappropriate, conflict with, or violate, any of the Intellectual Property of any other person or entity. The Company knows of no infringement, misappropriation or violation by others of Intellectual Property owned by or licensed to the Company or its subsidiaries which would reasonably be expected to result in a Material Adverse Effect. The Company and its subsidiaries have taken all reasonable steps necessary to secure their interests in such Intellectual Property from their employees and contractors and to protect the confidentiality of all of their confidential information and trade secrets. None of the Intellectual Property employed by the Company or its subsidiaries has been obtained or is being used by the Company or its subsidiaries in violation of any contractual obligation binding on the Company or any of its subsidiaries or, to the knowledge of the Company, any of their respective officers, directors or employees, except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. All Intellectual Property owned or exclusively licensed by the Company or its subsidiaries is free and clear of all liens, encumbrances, defects or other restrictions (other than non-exclusive licenses granted in the ordinary course of business), except those that would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. The Company and its subsidiaries are not subject to any judgment, order, writ, injunction or decree of any court or any Governmental Entity, nor has the Company or any of its subsidiaries entered into or become a party to any agreement made in settlement of any pending or threatened litigation, which materially restricts or impairs their use of any Intellectual Property.

5.17 Company IT Systems. The Company and its subsidiaries own or have a valid right to access and use all computer systems, networks, hardware, software, databases, websites, and equipment used to process, store, maintain and operate data, information, and functions used in connection with the business of the Company and its subsidiaries (the “**Company IT Systems**”), except as would not, individually or in the aggregate, have a Material Adverse Effect. The Company IT Systems are adequate for, and operate and perform in all material respects as required in connection with, the operation of the business of the Company and its subsidiaries as currently conducted, except as would not, individually or in the aggregate, have a Material Adverse Effect. The Company and its subsidiaries have implemented commercially reasonable backup, security and disaster recovery technology consistent in all material respects with applicable regulatory standards and customary industry practices.

5.18 Cybersecurity. Except as would not reasonably be expected to have a Material Adverse Effect, (A) there has been no security breach or other compromise of or relating to the Company IT Systems; (B) the Company has not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any such security breach or other compromise of the Company IT Systems; (C) the Company and its subsidiaries have implemented policies and procedures with respect to the Company IT Systems that are reasonably consistent with industry standards and practices, or as required by applicable regulatory standards; and (D) the Company and its subsidiaries are presently in material compliance with all applicable laws or statutes, judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority and contractual obligations relating to the privacy and security of the Company IT Systems and to the protection of the Company IT Systems from unauthorized use, access, misappropriation or modification.

5.19 Environmental Laws. Except as would not, singly or in the aggregate, result in a Material Adverse Effect, (A) neither the Company nor any of its subsidiaries is in violation of any applicable federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products, asbestos-containing materials or mold (collectively, "**Hazardous Materials**") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "**Environmental Laws**"), (B) the Company and its subsidiaries have all permits, authorizations and approvals required for their operations under any applicable Environmental Laws and are each in compliance with their requirements, (C) there are no pending or, to the knowledge of the Company, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigations or proceedings relating to any Environmental Law against the Company or any of its subsidiaries and (D) to the knowledge of the Company, there are no events or circumstances existing as of the date hereof that would reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or Governmental Entity, against or affecting the Company or any of its subsidiaries relating to Hazardous Materials or any Environmental Laws.

5.20 Accounting Controls and Disclosure Controls. The Company and its subsidiaries maintain effective internal control over financial reporting (as defined under Rule 13a-15 and 15d-15 under the 1934 Act Regulations) and a system of internal accounting controls sufficient to provide reasonable assurances that (A) transactions are executed in accordance with management's general or specific authorization; (B) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (C) access to assets is permitted only in accordance with management's general or specific authorization; and (D) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Since the end of the Company's most recent audited fiscal year, there has been (1) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (2) no change in the Company's internal control over financial reporting that has materially adversely affected, or is reasonably likely to materially adversely affect, the Company's internal control over financial reporting.

5.21 Compliance with the Sarbanes-Oxley Act. The Company is in compliance in all material respects with all provisions of the Sarbanes-Oxley Act of 2002 and all rules and regulations promulgated thereunder or implementing the provisions thereof that are in effect and with which the Company is required to comply.

5.22 Payment of Taxes. All United States federal income tax returns of the Company and its subsidiaries required by law to be filed have been filed and all taxes shown by such returns or otherwise assessed, which are due and payable, have been paid, except assessments against which appeals have been or will be promptly taken and as to which adequate reserves have been provided. No assessment in connection with United States federal tax returns has been made against the Company. The Company and its subsidiaries have filed all other tax returns that are required to have been filed by them through the date hereof or have timely requested extensions thereof pursuant to applicable foreign state, local or other law except insofar as the failure to file such returns would not result in a Material Adverse Effect and has paid all taxes due pursuant to such returns or all taxes due and payable pursuant to any assessment received by the Company and its subsidiaries, except for such taxes, if any, as are being contested in good faith and as to which adequate reserves have been established by the Company or its subsidiaries and except where the failure to pay such taxes would not result in a Material Adverse Effect. The charges, accruals and reserves on the books of the Company in respect of any income and corporation tax liability for any years not finally determined are adequate to meet any assessments or reassessments for additional income tax for any years not finally determined, except to the extent of any inadequacy that would not result in a Material Adverse Effect.

5.23 ERISA. Except as would not reasonably be expected to have a Material Adverse Effect: (i) at no time in the past six years has the Company or any ERISA Affiliate maintained, sponsored, participated in, contributed to or had any liability or obligation in respect of any Employee Benefit Plan subject to Title IV of ERISA or Section 412 of the Code, any “multiemployer plan” as defined in Section 3(37) of ERISA or any multiple employer plan for which the Company or any ERISA Affiliate has incurred or could incur material liability under Section 4063 or 4064 of ERISA, (ii) no “welfare benefit plan” as defined in Section 3(1) of ERISA provides or promises, or at any time provided or promised, retiree health, or other post-termination benefits except to the extent such benefit is fully insured or as may be required by the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, or similar state law and (iii) each Employee Benefit Plan is and has been operated in compliance with its terms and all applicable laws, including but not limited to ERISA and the Code. Each Employee Benefit Plan intended to be qualified under Code Section 401(a) has a favorable determination or opinion letter from the Internal Revenue Service (the “*IRS*”) upon which it can rely, and any such determination or opinion letter remains in effect and has not been revoked and no event has occurred and no facts or circumstances exist that could reasonably be expected to result in the loss of qualification or tax exemption of any such Employee Benefit Plan. With respect to each Foreign Benefit Plan, such Foreign Benefit Plan (1) if intended to qualify for special tax treatment, meets, in all material respects, the requirements for such treatment, and (2) if required to be funded, is funded to the extent required by applicable law. The Company does not have any obligations under any collective bargaining agreement with any union. As used in this Section 5.23, “*Code*” means the Internal Revenue Code of 1986, as amended; “*Employee Benefit Plan*” means any “employee benefit plan” within the meaning of Section 3(3) of ERISA, including, without limitation, all equity and equity-based, severance, employment, change-in-control, medical, disability, fringe benefit, bonus, incentive, deferred compensation, employee loan and all other employee benefit plans, agreements, programs, policies or other arrangements, whether or not subject to ERISA, under which (x) any current or former employee, director, independent contractor or other service provider of the Company or its subsidiaries has any present or future right to benefits and which are contributed to, sponsored by or maintained by the Company or any of the Subsidiaries or (y) the Company or any of the Subsidiaries has had or has any present or future direct or contingent obligation or liability; “*ERISA*” means the Employee Retirement Income Security Act of 1974, as amended; “*ERISA Affiliate*” means any member of the company’s controlled group as determined pursuant to Code Section 414(b), (c), (m) or (o), with respect to any Person, each business or entity under “common control” with such Person within the meaning of Section 4001(a)(14) of ERISA; and “*Foreign Benefit Plan*” means any Employee Benefit Plan established, maintained or contributed to outside of the United States of America and which is not subject to United States law.

5.24 Insurance. The Company and the Subsidiaries carry or are entitled to the benefits of insurance, with what the Company reasonably believes to be financially sound and reputable insurers, in such amounts and covering such risks as is adequate for the conduct of their respective businesses and the value of their respective properties and assets, and all such insurance is in full force and effect. The Company has no reason to believe that it or any of the Subsidiaries will not be able (A) to renew its existing insurance coverage as and when such policies expire or (B) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Effect.

5.25 Investment Company Act. The Company is not required, and upon the issuance and sale of the Securities will not be required, to register as an “investment company” under the Investment Company Act of 1940, as amended (the “*1940 Act*”).

5.26 No Unlawful Payments. None of the Company, any of its subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee, Affiliate or other person acting on behalf of the Company or any of its subsidiaries has taken any action, directly or indirectly, that would result in a violation by such persons of any applicable anti-corruption laws, including, without limitation, making use of the mails or any means or instrumentality of interstate commerce corruptly in furtherance of an offer, payment, promise to pay or authorization of the payment of any money, or other property, gift, promise to give, or authorization of the giving of anything of value to any “government official” (including any officer or employee of a government or government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing, or any political party or party official or candidate for political office) in violation of any applicable anti-corruption laws, and the Company and its subsidiaries have conducted their businesses in compliance with applicable anti-corruption laws and have instituted and maintain policies and procedures designed to ensure continued compliance therewith.

5.27 Compliance with Anti-Money Laundering Laws. The operations of the Company and its subsidiaries are and have been conducted at all times in compliance in all material respects with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any Governmental Entity (collectively, the “**Anti-Money Laundering Laws**”); and no action, suit or proceeding by or before any Governmental Entity involving the Company or any of its subsidiaries with respect to the Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

5.28 No Conflicts with Sanctions Laws. None of the Company, any of its subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee, Affiliate or other person acting on behalf of the Company or any of its subsidiaries is an individual or entity (“**Person**”) currently the subject or target of any sanctions administered or enforced by the United States Government, including, without limitation, the U.S. Department of the Treasury’s Office of Foreign Assets Control (“**OFAC**”), the United Nations Security Council (“**UNSC**”), the European Union, Her Majesty’s Treasury (“**HMT**”), or other relevant sanctions authority (collectively, “**Sanctions**”), nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject of Sanctions; and the Company will not knowingly directly or indirectly use the proceeds of the sale of the Securities, or lend, contribute or otherwise make available such proceeds to any subsidiaries, joint venture partners or other Person, to fund any activities of or the business with any Person, or in any country or territory, that, at the time of such funding, is the subject of Sanctions or in any other manner that will result in violation by any Person of Sanctions.

5.29 Regulatory Matters. Except as would not, singly or in the aggregate, result in a Material Adverse Effect: (i) neither the Company nor any of its subsidiaries has received any FDA Form 483, notice of adverse finding, warning letter or other correspondence or notice from the U.S. Food and Drug Administration (“*FDA*”) or any other Governmental Entity alleging or asserting noncompliance with any Applicable Laws (as defined in clause (ii) below) or Authorizations (as defined in clause (iii) below); (ii) the Company and each of its subsidiaries is and has been in compliance with statutes, laws, ordinances, rules and regulations applicable to the Company and its subsidiaries for the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by the Company, including without limitation, the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 301, et seq., similar laws of other Governmental Entities and the regulations promulgated pursuant to such laws (collectively, “*Applicable Laws*”); (iii) the Company and each of its subsidiaries possesses all licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws and/or to carry on its businesses as now conducted (“*Authorizations*”) and such Authorizations are valid and in full force and effect and the Company is not in violation of any term of any such Authorizations; (iv) neither the Company nor any of its subsidiaries has received notice of any ongoing claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any Governmental Entity or third party alleging that any product, operation or activity is in violation of any Applicable Laws or Authorizations or has any knowledge that any such Governmental Entity or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding, nor, to the Company’s knowledge, has there been any noncompliance with or violation of any Applicable Laws by the Company or any of its subsidiaries that could reasonably be expected to require the issuance of any such communication or result in an investigation, corrective action, or enforcement action by FDA or similar Governmental Entity; (v) neither the Company nor any of its subsidiaries has received notice that any Governmental Entity has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations or has any knowledge that any such Governmental Entity is threatening or is considering such action; and (vi) the Company and each of its subsidiaries has filed, obtained, maintained or submitted all reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete, correct and not misleading on the date filed (or were corrected or supplemented by a subsequent submission). Neither the Company, any subsidiary nor, to the Company’s knowledge, any of their respective directors, officers, employees or agents has been convicted of any crime under any Applicable Laws or has been the subject of an FDA debarment proceeding. Neither the Company nor any subsidiary has been nor is now subject to FDA’s Application Integrity Policy. To the Company’s knowledge, neither the Company, any subsidiary nor any of its directors, officers, employees or agents, has made, or caused the making of, any false statements on, or material omissions from, any other records or documentation prepared or maintained to comply with the requirements of the FDA or any other Governmental Entity. Neither the Company, any subsidiary nor, to the Company’s knowledge, any of their respective directors, officers, employees or agents, have with respect to each of the following statutes, or regulations promulgated thereto, as applicable: (i) engaged in activities under 42 U.S.C. §§ 1320a-7b or 1395nn; (ii) knowingly engaged in any activities under 42 U.S.C. § 1320a-7b or the Federal False Claims Act, 31 U.S.C. § 3729; or (iii) knowingly and willfully engaged in any activities under 42 U.S.C. § 1320a-7b, which are prohibited, cause for civil penalties, or constitute a mandatory or permissive exclusion from Medicare, Medicaid, or any other State Health Care Program or Federal Health Care Program.

5.30 Research, Studies and Tests. The research, nonclinical and clinical studies and tests conducted by, or to the knowledge of the Company, or on behalf of the Company and its subsidiaries have been and, if still pending, are being conducted with reasonable care and in all material respects in accordance with experimental protocols, procedures and controls pursuant to all Applicable Laws and Authorizations; the descriptions of the results of such research, nonclinical and clinical studies and tests contained in the SEC Reports are accurate and complete in all material respects and fairly present in all material respects the data derived from such research, nonclinical and clinical studies, and tests; the Company is not aware of any research, nonclinical or clinical studies or tests, the results of which the Company believes reasonably call into question the research, nonclinical or clinical study or test results described or referred to in the SEC Reports when viewed in the context in which such results are described; and neither the Company nor, to the knowledge of the Company, any of its subsidiaries has received any notices or correspondence from any Governmental Entity that will require the termination, suspension or material modification of any research, nonclinical or clinical study or test conducted by or on behalf of the Company or its subsidiaries, as applicable.

5.31 Private Placement. Neither the Company nor its subsidiaries, nor any person acting on its or their behalf, has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security under any circumstances that would require registration under the 1933 Act of the Securities being sold pursuant to this Agreement. Assuming the accuracy of the representations and warranties of the Purchasers contained in Section 4 hereof, the issuance of the Securities, including the issuance of the Conversion Shares and the Warrant Shares, is exempt from registration under the 1933 Act.

5.32 Registration Rights. Except as required pursuant to Section 8 of this Agreement, the Company is presently not under any obligation, and has not granted any rights, to register under the 1933 Act any of the Company's presently outstanding securities or any of its securities that may hereafter be issued that have not expired or been satisfied.

SECTION 6. Covenants.

6.01 Reasonable Best Efforts. Each party shall use its reasonable best efforts to timely satisfy each of the conditions to be satisfied by it as provided in Section 7 of this Agreement.

6.02 Use of Proceeds. The Company shall use the proceeds from the sale of the Securities for working capital and general corporate purposes.

6.03 Disclosure of Transactions and Other Material Information. Within the applicable period of time required by the 1934 Act, the Company shall file a Current Report on Form 8-K describing the terms and conditions of the transactions contemplated by this Agreement in the form required by the 1934 Act and attaching the Agreement, the Certificate of Designations and the Warrant as exhibits to such filing (including all attachments, the "**8-K Filing**"). The Company shall provide the Purchasers with a reasonable opportunity to review and provide comments on the draft of such 8-K Filing. The Company shall be permitted to issue a press releases or other public statement with respect to the transactions contemplated hereby, provided that the Company shall not publicly disclose the name of any Purchaser or an Affiliate of any Purchaser except as otherwise provided in this Section 6.03. Notwithstanding the foregoing, and unless required by the rules and regulations of the Commission or otherwise agreed to in writing by the Company and the Purchasers, the Company shall not publicly disclose the name of any Purchaser or an Affiliate of any Purchaser, or include the name of any Purchaser or an Affiliate of any Purchaser in any press release or filing with the Commission or any regulatory agency or the Principal Trading Market, without the prior written consent of such Purchaser.

6.04 Pledge of Securities. The Company acknowledges and agrees that the Securities may be pledged by a Purchaser in connection with a bona fide margin agreement or other loan or financing arrangement that is secured by the Securities. The pledge of Securities shall not be deemed to be a transfer, sale or assignment of the Securities hereunder, and no Purchaser effecting a pledge of Securities shall be required to provide the Company with any notice thereof or otherwise make any delivery to the Company pursuant to this Agreement, including, without limitation, Section 9.01 of this Agreement; *provided that* a Purchaser and its pledgee shall be required to comply with the provisions of Section 9.01 of this Agreement in order to effect a sale, transfer or assignment of Securities to such pledgee. The Company hereby agrees to execute and deliver such documentation as a pledgee of the Securities may reasonably request in connection with a pledge of the Securities to such pledgee by a Purchaser; *provided that* any and all costs to effect the pledge of the Securities are borne by the pledgor and/or pledgee and not the Company.

6.05 Expenses. The Company and each Purchaser is liable for, and will pay, its own expenses incurred in connection with the negotiation, preparation, execution and delivery of this Agreement, including, without limitation, attorneys' and consultants' fees and expenses, except that the Company has agreed to reimburse the BBA Purchasers in an amount of up to \$150,000 for BBA Purchasers' reasonable legal fees at the time of execution of this Agreement.

6.06 Listing. The Company shall use its best efforts to take all steps necessary to (i) cause all of the Conversion Shares and Common Warrant Shares to be approved for listing on the Principal Trading Market and (ii) maintain the listing of its Common Stock on the Principal Trading Market.

6.07 Reservation of Common Stock. Following the Company's receipt of the Required Shareholder Approval, the Company shall take all action necessary to at all times have authorized, and reserved for the purpose of issuance from and after the Trigger Date, the number of Conversion Shares and the Common Warrant Shares (without taking into account any limitations on conversion of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock and Series B4 Preferred Stock set forth in the Certificate of Designations or limitations on exercise of the Warrants set forth in the Warrants).

6.08 Participation in Future Financings.

(a) From the Effective Date and until the earlier of (x) the date on which the BBA Purchasers collectively own less than 2.5% of the Company's outstanding Common Stock, (y) the Series B Transition Date (as such term is defined in the Certificate of Designations), and (z) if all of the Securities issuable to the BBA Purchasers hereunder have not been purchased on or prior to the Fourth Closing Outside Date, upon any proposed issuance by the Company or any of the Subsidiaries of Common Stock, or Common Stock Equivalents for cash consideration, indebtedness or a combination thereof, other than (i) a rights offering to all holders of Common Stock and Preferred Stock (which may include extending such rights to holders of Common Stock Equivalents) or (ii) an Exempt Issuance (a "**Subsequent Financing**"), each BBA Purchaser shall have the right to participate in such Subsequent Financing up to its pro rata amount, calculated as its percentage equity ownership of the Company's outstanding equity (without taking into account any beneficial ownership limitations on conversion or exercise of any Common Stock Equivalents held by such BBA Purchaser), on the same terms, conditions and price provided for in the Subsequent Financing, unless the Subsequent Financing is an underwritten public offering (an "**Underwritten Subsequent Financing**"), in which case the Company shall offer the BBA Purchasers the right to participate in such public offering when it is lawful for the Company to do so, including with respect to any limitations necessary to preserve the validity of the private placement exemption under the 1933 Act for the offer and sale of the Securities hereunder, but the BBA Purchasers shall not be entitled to purchase any particular amount of such public offering.

(b) At least 10 Business Days prior to the closing of the Subsequent Financing, the Company shall deliver to the BBA Purchasers a written notice of its intention to effect a Subsequent Financing (“**Pre-Notice**”), which Pre-Notice shall ask each BBA Purchaser if it wants to review the details of such financing in order to confirm whether such BBA Purchaser wishes to participate in such financing (such additional notice, a “**Subsequent Financing Notice**”). Upon the request of a BBA Purchaser, and only upon a request by such BBA Purchaser, for a Subsequent Financing Notice, the Company shall promptly, but no later than one Business Day after such request, deliver a Subsequent Financing Notice to the BBA Purchaser. The requesting BBA Purchaser shall be deemed to have acknowledged that the Subsequent Financing Notice may contain material non-public information. The Subsequent Financing Notice shall describe in reasonable detail the proposed terms of such Subsequent Financing, the amount of proceeds intended to be raised thereunder and the person or persons through or with whom such Subsequent Financing is proposed to be effected and shall include a term sheet or similar document relating thereto as an attachment.

(c) If the BBA Purchaser wishes to participate in such Subsequent Financing it must provide written notice to the Company by not later than 5:30 p.m. (New York City time) on the fifth Business Day after the BBA Purchaser has received the Subsequent Financing Notice that the BBA Purchaser is willing to participate in the Subsequent Financing, the amount of the BBA Purchaser’s participation, and representing and warranting that the BBA Purchaser has such funds ready, willing, and available for investment on the terms set forth in the Subsequent Financing Notice. If the Company receives no such notice from the BBA Purchaser as of such fifth Business Day, the BBA Purchaser shall be deemed to have notified the Company that it does not elect to participate and the Company may effect the Subsequent Financing on the terms and with the persons set forth in the Subsequent Financing Notice.

(d) If by 5:30 p.m. (New York City time) on the fifth Business Day after the BBA Purchaser has received the Subsequent Financing Notice, the Company has received written notification by the BBA Purchaser of its willingness to participate in the Subsequent Financing (or to cause its designees to participate), then the Company shall effect the Subsequent Financing with the BBA Purchaser (in the amount indicated in its notification up to the Participation Maximum) and, with respect to the remaining portion of such Subsequent Financing on the terms and with the Persons set forth in the Subsequent Financing Notice.

(e) The Company must provide the BBA Purchaser with a second Subsequent Financing Notice, and the BBA Purchaser will again have the right of participation set forth above in this [Section 6.08](#), if the Subsequent Financing subject to the initial Subsequent Financing Notice is amended in any material respect or is not consummated for any reason on the terms set forth in such Subsequent Financing Notice within 30 Business Days after the date of the initial Subsequent Financing Notice.

(f) Notwithstanding anything to the contrary in this [Section 6.08](#) and unless otherwise agreed to by the BBA Purchaser, the Company shall either confirm in writing to the BBA Purchaser that the transaction with respect to the Subsequent Financing has been abandoned or shall publicly disclose its intention to issue the securities in the Subsequent Financing, in either case in such a manner such that the BBA Purchaser will not be in possession of any material, non-public information, by the 10th Business Day following delivery of the Subsequent Financing Notice. If by such 10th Business Day, no public disclosure regarding a transaction with respect to the Subsequent Financing has been made, and no notice regarding the abandonment of such transaction has been received by the BBA Purchaser, such transaction shall be deemed to have been abandoned and the BBA Purchaser shall not be deemed to be in possession of any material, non-public information with respect to the Company or any of its Subsidiaries.

6.09 Board Rights.

(a) At any time after the Effective Date when the BBA Purchasers own at least 2.5% of the Company's outstanding Common Stock and at least 33% of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock purchased by them pursuant to this Agreement, the BBA Purchasers shall have the right to designate one individual to be present and participate in a non-voting capacity at all meetings of the board of directors of the Company (the "**Board**") or any committee thereof, including any telephonic meetings (such individual, the "**BBA Purchaser Board Observer**"). Any materials that are sent by the Company to the members of the Board in their capacity as such shall be sent to the BBA Purchaser Board Observer simultaneously by means reasonably designed to ensure timely receipt by the BBA Purchaser Board Observer, and the Company will give the BBA Purchaser Board Observer notice of such meetings, by the same means as such notices are delivered to the members of the Board and at the same time as notice is provided or delivered to the Board; provided, that the BBA Purchaser Board Observer agrees to hold in confidence and trust, to act in a fiduciary manner with respect to and not to disclose any information provided to or learned by the BBA Purchaser Board Observer acting in such capacity, whether in connection with the BBA Purchaser Board Observer's attendance at meetings of the Board, in connection with the receipt of materials delivered to the Board or otherwise. Notwithstanding the provisions of this Section 6.09(b), the Company reserves the right to exclude the BBA Purchaser Board Observer from any meeting of a committee of the Board for any reason whatsoever, to exclude the BBA Purchaser Board Observer from any meeting of the Board, or a portion thereof, and to redact portions of any materials delivered to the BBA Purchaser Board Observer where and to the extent that the Company reasonably believes that withholding such information or excluding the BBA Purchaser Board Observer from attending such meeting of the Board, or a portion thereof, is reasonably necessary: (i) to preserve attorney-client, work product or similar privilege between the Company and its counsel with respect to any matter; (ii) to comply with the terms and conditions of confidentiality agreements between the Company and any third parties; or (iii) because the Board has determined that there exists, with respect to the subject of such deliberation or such information, an actual or potential conflict of interest between the BBA Purchasers and the Company. Further, the members of the Board shall be entitled to hold executive sessions which the BBA Purchaser Board Observer may not be invited to attend. The BBA Purchaser Board Observer shall use the same degree of care to protect the Company's confidential and proprietary information as the BBA Purchasers use to protect their confidential and proprietary information of like nature, but in no circumstances with less than reasonable care.

(b) For purposes of this Section 6.09, ownership shall be calculated in accordance with applicable guidance published by the Principal Trading Market and shall exclude any shares underlying the Warrants or other Common Stock Equivalents requiring additional payments to receive the underlying Common Stock upon such exercise or conversion.

6.10 Negative Covenants. Until the earlier of (i) the date on which the BBA Purchasers collectively own less than 2.5% of the Company's outstanding Common Stock or less than 33% of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock purchased by them pursuant to this Agreement, and (ii) the Series B Transition Date, the Company shall not do any of the following without the prior approval of the BBA Purchasers:

- (a) issue or authorize the issuance of any equity security that is senior or *pari passu* to the Series B1 Preferred Stock with respect to liquidation preference (other than the Series B2 Preferred Stock, Series B3 Preferred Stock and Series B4 Preferred Stock issued pursuant to this Agreement);
- (b) incur any indebtedness in excess of \$1,000,000, in the aggregate, outside the ordinary course of business (other than the refinancing of the Company's existing term debt);
- (c) sell, transfer or otherwise dispose of tilsotolimod, such approval not to be unreasonably withheld;
- (d) license tilsotolimod in the United States or the European Union, in each case such approval not to be unreasonably withheld by the BBA Purchasers; or
- (e) pay any dividends;

provided that if the Company seeks approval from the BBA Purchasers for any of the foregoing and the BBA Purchasers do not respond to such request within three Business Days or the BBA Purchasers elect not to receive the information required to consider such requested approvals, the requirement for the BBA Purchasers' approval shall be deemed waived by the parties solely with respect to the applicable approval being sought.

6.11 Payment Upon a Fundamental Transaction. If, at any time after the Effective Date and prior to the Trigger Date, (i) the Company effects any merger or consolidation of the Company with or into another entity, (ii) the Company effects any sale of all or substantially all of its assets in one or a series of related transactions, (iii) any tender offer or exchange offer (whether by the Company or another entity) is completed pursuant to which holders of Common Stock are permitted to tender or exchange their shares for other securities, cash or property, (iv) the Company consummates a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, or spin-off) with one or more persons or entities whereby such other persons or entities acquire more than the 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by such other persons or entities making or party to, or associated or affiliated with the other persons or entities making or party to, such stock purchase agreement or other business combination), (or (v) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (in any such case, a "**Fundamental Transaction**"), then the Purchasers shall have the right to receive from the Company, concurrently with the closing of such Fundamental Transaction, cash in an amount that equals the amount such Purchaser would have received for the shares of Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and accompanying Warrants issuable pursuant to this Agreement in the Fundamental Transaction (or cash in an amount that equals the fair market value of the securities or other non-cash property that the Purchaser would have received for such shares of Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and accompanying Warrants issuable pursuant to this Agreement in the Fundamental Transaction) less the amounts that would have otherwise been payable by Purchasers for (i) the purchase of such shares of Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and accompanying Warrants and (ii) the exercise of such Warrants for the underlying Warrant Shares.

6.12 Voting Agreement. Concurrently with the execution of this Agreement, each Purchaser shall enter into a voting agreement, in the form attached hereto as Exhibit D, whereby such Purchasers shall agree to vote the shares of Common Stock held by such Purchasers as of the applicable record date for the Required Shareholder Approval, in favor of such proposals necessary to effect the Required Shareholder Approval.

6.13 Required Shareholder Approval. The Company shall seek the Required Shareholder Approval at its 2020 annual meeting of stockholders (the “*2020 Annual Meeting*”). In the event the Required Shareholder Approval is not obtained at the 2020 Annual Meeting, the Company shall thereafter promptly call one or more special meetings of stockholders to seek the Required Shareholder Approval. If, despite the Company’s efforts, the Required Shareholder Approval is not obtained on or prior to December 31, 2020, the Option Fee shall be returned to the Purchasers within five Business Days after such date.

SECTION 7. Conditions of Parties’ Obligations.

7.01 Conditions of the Purchasers’ Obligations at the Closing. The obligations of the Purchasers under Section 2 hereof are subject to the fulfillment, at or prior to the applicable Closing, of all of the following conditions, any of which may be waived in whole or in part by the Purchasers in their absolute discretion.

(a) Representations and Warranties. The representations and warranties of the Company contained in this Agreement shall be true and correct on and as of the Closing Date with the same effect as though such representations and warranties had been made on and as of the Closing Date (except to the extent expressly made as of an earlier date in which case as of such earlier date).

(b) Performance. The Company shall have performed and complied with all covenants, agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by it on or prior to the Closing Date.

(c) Opinion of Company Counsel. The Company shall have delivered to the Purchasers the opinion of Morgan, Lewis & Bockius LLP, counsel for the Company, or such other counsel for the Company acceptable to the Purchasers in their sole discretion, dated as of the applicable Closing Date in form and substance satisfactory to the Purchasers.

(d) Compliance Certificate. The Chief Executive Officer of the Company shall have delivered to the Purchasers at the Closing Date a certificate certifying that the conditions specified in Sections 7.01(a) and 7.01(b) of this Agreement have been fulfilled.

(e) Secretary’s Certificate. The Secretary of the Company shall have delivered to the Purchasers at the Closing Date a certificate certifying (i) the Certificate of Incorporation, as amended, including the Certificate of Designations, of the Company; (ii) the Bylaws of the Company; and (iii) resolutions of the Board of Directors (or an authorized committee thereof) approving this Agreement and the transactions contemplated by this Agreement.

(f) Listing Requirements. The shares of Common Stock (including the Conversion Shares and the Common Warrant Shares) (i) shall be listed on the Principal Trading Market and (ii) shall not have been suspended, as of the Closing Date, by the Commission or the Principal Trading Market from trading on the Principal Trading Market nor shall suspension by the Commission or the Principal Trading Market have been threatened, as of the Closing Date, either (A) in writing by the Commission or the Principal Trading Market or (B) by falling below the minimum listing maintenance requirements of the Principal Trading Market.

(g) Qualification under State Securities Laws. All registrations, qualifications, permits and approvals, if any, required under applicable state securities laws shall have been obtained for the lawful execution, delivery and performance of this Agreement.

(h) Required Shareholder Approval. Prior to the Second Closing Date, the Company shall have received the Required Shareholder Approval and effected the related amendments to its Certificate of Incorporation.

7.02 Conditions of the Company's Obligations. The obligations of the Company under Section 2 hereof are subject to the fulfillment, at or prior to the applicable Closing, of all of the following conditions, any of which may be waived in whole or in part by the Company in its absolute discretion.

(a) Representations and Warranties. The representations and warranties of the Purchasers contained in this Agreement shall be true and correct on and as of the Closing Date with the same effect as though such representations and warranties had been made on and as of the Closing Date (except to the extent expressly made as of an earlier date in which case as of such earlier date).

(b) Performance. Each Purchaser shall have performed and complied with all covenants, agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by it on or prior to the Closing Date, including without limitation payment of the Option Fee on the First Closing Date.

SECTION 8. Registration Rights. Concurrently with the execution of this Agreement, the Company shall enter into the registration rights agreement with the Purchasers in the form attached hereto as Exhibit C.

SECTION 9. Transfer Restrictions; Restrictive Legend.

9.01 Transfer Restrictions. The Purchasers understand that the Company may, as a condition to the transfer of any of the Securities, Conversion Shares or Warrant Shares, require that the request for transfer be accompanied by a certificate and/or an opinion of counsel reasonably satisfactory to the Company, to the effect that the proposed transfer does not result in a violation of the 1933 Act, unless such transfer is covered by an effective registration statement or by Rule 144 or Rule 144A under the 1933 Act. It is understood that the certificates evidencing the Securities, Conversion Shares and Warrant Shares may bear substantially the following legend:

“THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY APPLICABLE STATE SECURITIES LAWS. THEY MAY NOT BE SOLD, OFFERED FOR SALE, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF A REGISTRATION STATEMENT IN EFFECT WITH RESPECT TO THE SECURITIES UNDER SUCH ACT OR APPLICABLE STATE SECURITIES LAWS OR A CERTIFICATE AND/OR AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED.”

9.02 Unlegended Certificates. A Purchaser may request that the Company remove, and the Company agrees to authorize the removal of, any legend from such Securities, Conversion Shares or Warrant Shares, following the delivery by a Purchaser to the Company or the Company's transfer agent of a legended certificate representing such Securities, Conversion Shares or Warrant Shares: (i) in connection with any sale (which for the avoidance of doubt includes any planned sale within a reasonable period of time) of such Securities, Conversion Shares or Warrant Shares pursuant to Rule 144 (*provided that* any legend would only be removed in connection with the consummation of any such sale) or (ii) following the time a legend is no longer required with respect to such Securities, Conversion Shares or Warrant Shares. If a legend is no longer required pursuant to the foregoing, the Company will, no later than five Business Days following the delivery by a Purchaser to the Company or the Company's transfer agent of a legended certificate representing such Securities, Conversion Shares or Warrant Shares (and such other documents as the Company or the Company's transfer agent may reasonably request, including an opinion of counsel), deliver or cause to be delivered to such Purchaser a certificate representing such Securities, Conversion Shares or Warrant Shares that is free from all restrictive legends. Certificates for Securities, Conversion Shares or Warrant Shares free from all restrictive legends may be transmitted by the Company's transfer agent to the Purchasers as directed by such Purchaser. The Company warrants that the Securities, Conversion Shares or Warrant Shares shall otherwise be freely transferable on the books and records of the Company as and to the extent provided in this Agreement.

SECTION 10. Registration, Transfer and Substitution of Certificates for Securities.

10.01 Stock Register; Ownership of Securities. The Company will keep at its principal office, or will cause its transfer agent to keep, a register in which the Company will provide for the registration of transfers of the Securities. The Company may treat the person in whose name any of the Securities are registered on such register as the owner thereof and the Company shall not be affected by any notice to the contrary. All references in this Agreement to a “holder” of any Securities shall mean the person in whose name such Securities are at the time registered on such register.

10.02 Replacement of Certificates. Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of any certificate representing any of the Securities, and, in the case of any such loss, theft or destruction, upon delivery of an indemnity agreement and surety bond reasonably satisfactory to the Company or, in the case of any such mutilation, upon surrender of such certificate for cancellation at the office of the Company maintained pursuant to Section 10.01 hereof, the Company at its expense will execute and deliver, in lieu thereof, a new certificate representing such Securities, of like tenor.

SECTION 11. Definitions. Unless the context otherwise requires, the terms defined in this Section 11 shall have the meanings specified for all purposes of this Agreement. All accounting terms used in this Agreement, whether or not defined in this Section 11, shall be construed in accordance with GAAP and such accounting terms shall be determined on a consolidated basis for the Company and each of its subsidiaries, and the financial statements and other financial information to be furnished by the Company pursuant to this Agreement shall be consolidated and presented with consolidating financial statements of the Company and each of its subsidiaries.

“**1933 Act Regulations**” means the rules and regulations promulgated under the 1933 Act.

“**1934 Act**” means the Securities Exchange Act of 1934, as amended.

“**1934 Act Regulations**” means the rules and regulations promulgated under the 1934 Act.

“**Affiliate**” shall have the meaning ascribed to such term in Rule 12b-2 of the General Rules and Regulations under the 1934 Act.

“**BBA Purchasers**” means the investment partnerships advised by Baker Bros. Advisors LP set forth on the Schedule of Purchasers.

“**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in the City of New York are authorized or required by law to remain closed.

“**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries 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.

“**Common Warrant Shares**” means the shares of Common Stock issuable upon exercise of the Warrants.

“**Conversion Shares**” means the Series B1 Preferred Conversion Shares, Series B2 Preferred Conversion Shares, the Series B3 Preferred Conversion Shares and the Series B4 Preferred Conversion Shares, together.

“**Exempt Issuance**” means the issuance of (a) shares of Common Stock and options to officers, directors, employees or service providers of the Company, prior to and after the Closing Date, (b) securities issuable pursuant to this Agreement or upon conversion or exercise of such securities, (c) other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities and any term thereof have not been amended since the date of this Agreement to increase the number of such securities or to decrease the issue price, exercise price, exchange price or conversion price of such securities, (d) securities issued to banks, equipment lessors or other financial institutions, or to real property lessors, pursuant to a debt financing, equipment leasing or real property leasing transaction, and/or (e) securities issued in connection with (i) sponsored research, collaboration, technology license, development, OEM, marketing or other similar agreements or strategic partnerships or (ii) investments by strategic investors (not organized primarily to engage in the business of capital raising), provided that the aggregate amount permitted under this clause (e) (ii) shall not exceed 5% of the Company’s issued and outstanding shares of Common Stock as of the date of this Agreement without the BBA Purchasers’ prior written consent, which consent shall not be unreasonably withheld.

“**ORR Data Announcement**” means the Company’s public announcement of the overall response rate primary endpoint of the ILLUMINATE-301 study, as defined in the final statistical analysis plan of the study protocol, as agreed with the FDA prior to unblinding (the “**ORR Data**”) and upon request by the BBA Purchasers (if BBA chooses to request it, and enter into any necessary non-disclosure agreement), the provision by the Company to the BBA Purchasers of data, to the extent available to Company, regarding the cumulative number of overall survival events that have occurred in the ILLUMINATE-301 study at the time the ORR Data is made public by the Company.

“**Preferred Stock**” means the Company’s preferred stock, par value \$0.01 per share.

“**Required Shareholder Approval**” means the approval of the stockholders of the Company to increase the authorized shares of Common Stock (or to effect a reverse split of the Common Stock) in an amount sufficient to cover the conversion of the Series B2 Preferred Stock, Series B3 Preferred Stock, Series B4 Preferred Stock and exercise of the Warrants (including the shares of Common Stock issuable upon conversion of the Series B1 Preferred Warrant Shares).

“**Principal Trading Market**” means the Nasdaq Capital Market or such other Trading Market on which the Common Stock is primarily listed for trading.

“**Rule 144**” means Rule 144 promulgated by the Commission pursuant to the 1933 Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“**Series B1 Preferred Conversion Shares**” means the shares of Common Stock issuable upon conversion of the Series B1 Preferred Warrant Shares.

“**Series B1 Preferred Warrant Shares**” means the shares of Series B1 Preferred Stock issuable upon the exercise of the Warrants.

“**Series B2 Preferred Conversion Shares**” means the shares of Common Stock issuable upon conversion of the Series B2 Preferred Stock.

“**Series B3 Preferred Conversion Shares**” means the shares of Common Stock issuable upon conversion of the Series B3 Preferred Stock.

“**Series B4 Preferred Conversion Shares**” means the shares of Common Stock issuable upon conversion of the Series B4 Preferred Stock.

“**Trading Market**” means whichever of the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market, the New York Stock Exchange, or the NYSE American on which the Common Stock is listed for trading on the date in question.

“**Warrant Shares**” means the Common Warrant Shares and the Series B1 Preferred Warrant Shares, together.

SECTION 12. Miscellaneous.

12.01 Waivers and Amendments. Upon the approval of the Company and the written consent of the Purchasers, the obligations of the Company and the rights of the Purchasers under this Agreement may be waived (either generally or in a particular instance, either retroactively or prospectively and either for a specified period of time or indefinitely). Neither this Agreement, nor any provision hereof, may be changed, waived, discharged or terminated orally or by course of dealing, but only by an instrument in writing executed by the Company and the Purchasers.

12.02 Notices. All notices, requests, consents, and other communications under this Agreement shall be in writing and shall be deemed delivered: (a) when delivered, if delivered personally, (b) four Business Days after being sent by registered or certified mail, return receipt requested, postage prepaid, (c) one Business Day after being sent via a reputable nationwide overnight courier service guaranteeing next Business Day delivery, or (d) when receipt is acknowledged, in the case of email, in each case to the intended recipient as set forth below, with respect to the Company, and to the addresses set forth on the Schedule of Purchasers with respect to the Purchasers.

If to the Company:

Idera Pharmaceuticals, Inc.
505 Eagleview Blvd., Suite 212
Exton, Pennsylvania 19341
Attn: General Counsel
Attn: Chief Financial Officer

with copies to:

Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, Pennsylvania 19103-2921
Attn: Joanne R. Soslow, Esq.

or at such other address as the Company or each Purchaser may specify by written notice to the other parties hereto in accordance with this Section 12.02.

12.03 Cumulative Remedies. None of the rights, powers or remedies conferred upon the Purchasers on the one hand or the Company on the other hand shall be mutually exclusive, and each such right, power or remedy shall be cumulative and in addition to every other right, power or remedy, whether conferred by this Agreement or now or hereafter available at law, in equity, by statute or otherwise.

12.04 Successors and Assigns. All the terms and provisions of this Agreement shall be binding upon and inure to the benefit of and be enforceable by the respective parties hereto, the successors and permitted assigns of each Purchaser and the successors of the Company, whether so expressed or not. None of the parties hereto may assign its rights or obligations hereof without the prior written consent of the Company, except that a Purchaser may, without the prior consent of the Company, assign its rights to purchase the Securities hereunder to any of its Affiliates (provided each such Affiliate agrees to be bound by the terms of this Agreement and makes the same representations and warranties set forth in Section 4 hereof). This Agreement shall not inure to the benefit of or be enforceable by any other person.

12.05 Headings. The headings of the Sections and paragraphs of this Agreement have been inserted for convenience of reference only and do not constitute a part of this Agreement.

12.06 Governing Law; Jurisdiction. This Agreement shall be governed by and construed in accordance with the laws of the State of New York without regard to its conflict of law principles. Any suit, action or proceeding seeking to enforce any provision of, or based on any matter arising out of or in connection with, this Agreement or the transactions contemplated hereby may be brought in any federal or state court located in the City of New York and State of New York, and each of the parties hereby consents to the jurisdiction of such courts (and of the appropriate appellate courts therefrom) in any such suit, action or proceeding and irrevocably waives, to the fullest extent permitted by law, any objection which it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court or that any such suit, action or proceeding which is brought in any such court has been brought in an inconvenient forum. Process in any such suit, action or proceeding may be served on any party anywhere in the world, whether within or without the jurisdiction of any such court.

12.07 Survival. The representations and warranties of the Company and the Purchasers contained in Sections 4 and 5, and the agreements and covenants set forth in Sections 6, 8 and 12 shall survive the Closing in accordance with their respective terms. Each Purchaser shall be responsible only for its own representations, warranties, agreements and covenants hereunder.

12.08 Counterparts; Effectiveness. This Agreement may be executed in any number of counterparts and by different parties hereto in separate counterparts, with the same effect as if all parties had signed the same document. All such counterparts (including counterparts delivered by facsimile or other electronic format) shall be deemed an original, shall be construed together and shall constitute one and the same instrument. This Agreement shall become effective when each party hereto shall have received counterparts hereof signed by all of the other parties hereto.

12.09 Entire Agreement. This Agreement contains the entire agreement among the parties hereto with respect to the subject matter hereof and, except as set forth below, this agreement supersedes and replaces all other prior agreements, written or oral, among the parties hereto with respect to the subject matter hereof. Notwithstanding the foregoing or anything to the contrary in this Agreement, this Agreement shall not supersede any confidentiality or other non-disclosure agreements that may be in place between the Company and any Purchaser.

12.10 Severability. If any provision of this Agreement shall be found by any court of competent jurisdiction to be invalid or unenforceable, the parties hereby waive such provision to the extent that it is found to be invalid or unenforceable. Such provision shall, to the maximum extent allowable by law, be modified by such court so that it becomes enforceable, and, as modified, shall be enforced as any other provision hereof, all the other provisions hereof continuing in full force and effect.

12.11 Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under this Agreement are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance of the obligations of any other Purchaser under this Agreement. Nothing contained herein, and no action taken by any Purchaser pursuant hereto or thereto, shall be deemed to constitute the Purchasers as, and the Company acknowledges that the Purchasers do not so constitute, a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group, and the Company will not assert any such claim with respect to such obligations or the transactions contemplated by this Agreement and the Company acknowledges that the Purchasers are not acting in concert or as a group with respect to such obligations or the transactions contemplated by this Agreement. The Company acknowledges and each Purchaser confirms that it has independently participated in the negotiation of the transaction contemplated hereby with the advice of its own counsel and advisors. Each Purchaser shall be entitled to independently protect and enforce its rights, including, without limitation, the rights arising out of this Agreement, and it shall not be necessary for any other Purchaser to be joined as an additional party in any proceeding for such purpose.

[Signature page follows]

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed as of the Effective Date.

IDERA PHARMACEUTICALS, INC.

By: /s/ Vincent J. Milano

Name: Vincent J. Milano

Title: CEO

[Signature page to Securities Purchase Agreement]

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed as of the Effective Date.

667, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to **667, L.P.**, pursuant to authority granted to it by Baker Biotech Capital, L.P., general partner to 667, L.P., and not as the general partner.

By: /s/ Scott L. Lessing

Scott L. Lessing

President

BAKER BROTHERS LIFE SCIENCES, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to **Baker Brothers Life Sciences, L.P.**, pursuant to authority granted to it by Baker Brothers Life Sciences Capital, L.P., general partner to Baker Brothers Life Sciences, L.P., and not as the general partner.

By: /s/ Scott L. Lessing

Scott L. Lessing

President

[Signature page to Securities Purchase Agreement]

SCHEDULE OF PURCHASERS

OPTION FEE:

Name	Option Fee
667, L.P.	\$ 511,744.13
BAKER BROTHERS LIFE SCIENCES, L.P.	\$ 5,664,190.88
Total:	\$ 6,175,935

FIRST CLOSING:

Name and Address	Aggregate Purchase Price	Series B1 Preferred Stock and Warrants purchased:	
		Number of Shares of Series B1 Preferred Stock	Number of Common Warrant Shares
667, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 322,749	1,962	196,200
BAKER BROTHERS LIFE SCIENCES, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 3,573,269	21,722	2,172,200
Total:	\$ 3,896,018	23,684	2,368,400

SECOND CLOSING:

Name and Address	Aggregate Purchase Price	Series B2 Preferred Stock and Warrants purchased:	
		Number of Shares of Series B2 Preferred Stock	Number of Common Warrant Shares
667, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 1,242,904	8,177	817,700
BAKER BROTHERS LIFE SCIENCES, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 13,757,216	90,508	9,050,800
Total:	\$ 15,000,120	98,685	9,868,500

THIRD CLOSING:

Name and Address	Aggregate Purchase Price	Series B3 Preferred Stock and Warrants purchased:	
		Number of Shares of Series B3 Preferred Stock	Number of Common Warrant Shares
667, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 1,242,878	6,829	546,339
BAKER BROTHERS LIFE SCIENCES, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 13,757,198	75,589	6,047,101
Total:	\$ 15,000,076	82,418	6,593,440

FOURTH CLOSING:

Name and Address	Aggregate Purchase Price	Series B4 Preferred Stock and Warrants purchased:	
		Number of Shares of Series B4 Preferred Stock	Number of Common Warrant Shares
667, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 1,242,878	6,829	546,339
BAKER BROTHERS LIFE SCIENCES, L.P.			
c/o Baker Brothers Investments 860 Washington St, 3rd Floor New York, NY 10014 Attention: Scott Lessing, President	\$ 13,757,198	75,589	6,047,101
Total:	\$ 15,000,076	82,418	6,593,440

Exhibit A

Certificate of Designation

**CERTIFICATE OF DESIGNATIONS, PREFERENCES
AND RIGHTS OF
SERIES B1 CONVERTIBLE PREFERRED STOCK
SERIES B2 CONVERTIBLE PREFERRED STOCK
SERIES B3 CONVERTIBLE PREFERRED STOCK
AND
SERIES B4 CONVERTIBLE PREFERRED STOCK
OF
IDERA PHARMACEUTICALS, INC.**

**(Pursuant to Section 151 of the
Delaware General Corporation Law)**

Idera Pharmaceuticals, Inc., a Delaware corporation (the "Corporation"), hereby certifies that the following resolution was duly approved and adopted by the Board of Directors of the Corporation (the "Board of Directors"), which resolution remains in full force and effect on the date hereof:

RESOLVED, that pursuant to the authority expressly granted to and vested in the Board of Directors by the provisions of the Restated Certificate of Incorporation of the Corporation, as further amended to date (the "Certificate of Incorporation"), and the Amended and Restated Bylaws of the Corporation (the "Bylaws"), and in accordance with Section 151 of the General Corporation Law of the State of Delaware (the "DGCL"), there is hereby created, out of the 5,000,000 shares of Preferred Stock, par value \$0.01 per share (the "Preferred Stock"), of the Corporation remaining authorized, unissued and undesignated:

- a series of the Preferred Stock consisting of 277,921 shares (the "Series B1 Preferred Stock"), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock);
 - a series of the Preferred Stock consisting of 98,685 shares (the "Series B2 Preferred Stock"), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock);
 - a series of the Preferred Stock consisting of 82,418 shares (the "Series B3 Preferred Stock"), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock); and
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a series of the Preferred Stock consisting of 82,418 shares (the “Series B4 Preferred Stock”), which series shall have the following powers, designations, preferences and relative, participating, optional or other rights, and the following qualifications, limitations and restrictions (in addition to any powers, designations, preferences and relative, participating, optional or other rights, and any qualifications, limitations and restrictions, set forth in the Certificate of Incorporation that are applicable to the Preferred Stock).

SECTION 1 Designation of Amounts.

(a) 277,921 shares of Preferred Stock shall be, and hereby are, designated the “Series B1 Convertible Preferred Stock” (the “Series B1 Preferred Stock”), par value \$0.01 per share.

(b) 98,685 shares of Preferred Stock shall be, and hereby are, designated the “Series B2 Convertible Preferred Stock” (the “Series B2 Preferred Stock”), par value \$0.01 per share.

(c) 82,418 shares of Preferred Stock shall be, and hereby are, designated the “Series B3 Convertible Preferred Stock” (the “Series B3 Preferred Stock”), par value \$0.01 per share.

(d) 82,418 shares of Preferred Stock shall be, and hereby are, designated the “Series B4 Convertible Preferred Stock” (the “Series B4 Preferred Stock” and, together with the Series B1 Preferred Stock, Series B2 Preferred Stock and Series B3 Preferred Stock, the “Series B1/B2/B3/B4 Preferred Stock”), par value \$0.01 per share.

(e) Subject to the requirements of the DGCL, the Certificate of Incorporation and this Certificate of Designations, the number of shares of Preferred Stock that are designated as Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock or Series B4 Preferred Stock may be increased or decreased by vote of the Board of Directors; provided, that no decrease shall reduce the number of shares of the applicable series to a number less than the number of such shares then outstanding. Any shares of Series B1/B2/B3/B4 Preferred Stock converted, redeemed, purchased or otherwise acquired by the Corporation in any manner whatsoever shall, automatically and without further action, be retired and canceled promptly after the acquisition thereof, and shall become authorized but unissued shares of Preferred Stock when the Corporation shall take such action as may be necessary to reduce the number of authorized shares of the Series B1 Preferred Stock, Series B2 Preferred Stock, Series B3 Preferred Stock or Series B4 Preferred Stock and may be reissued as part of a new series of any class or series of Preferred Stock in accordance with the Certificate of Incorporation and this Certificate of Designations.

SECTION 2 Certain Definitions.

Unless the context otherwise requires, the terms defined in this Section 2 shall have, for all purposes of this resolution, the meanings specified (with terms defined in the singular having comparable meanings when used in the plural).

“Affiliate” means any person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person, as such terms are used in and construed under Rule 405 under the Securities Act.

“Attribution Parties” shall have the meaning set forth in Section 6(c).

“Beneficial Ownership Limitation” shall have the meaning set forth in Section 6(c).

“Board of Directors” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Bylaws” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Certificate of Incorporation” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Common Stock” shall mean the common stock, par value \$0.001 per share, of the Corporation.

“Conversion Date” shall have the meaning set forth in Section 6(e).

“Conversion Notice” shall have the meaning set forth in Section 6(e).

“Conversion Price” shall mean: (a) in the case of Series B1 Preferred Stock, \$1.52 (the “Series B1 Conversion Price”); (b) in the case of Series B2 Preferred Stock, \$1.52 (the “Series B2 Conversion Price”); (c) in the case of Series B3 Preferred Stock, \$1.82 (the “Series B3 Conversion Price”); and (d) in the case of Series B4 Preferred Stock, \$1.82 (the “Series B4 Conversion Price”); in each case, subject to adjustment from time to time in accordance with Section 6(d).

“Corporation” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Deemed Liquidation” Each of the following events shall be considered a “Deemed Liquidation” unless the holders of at least a majority of the outstanding shares of Series B1/B2/B3/B4 Preferred Stock elect otherwise by written notice sent to the Corporation at least 30 days prior to the effective date of any such event:

(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 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 (1) the surviving or resulting corporation; or (2) 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, consolidation 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.

“DGCL” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Exchange Act” shall have the meaning set forth in Section 6(c).

“Fair Market Value” shall mean, with respect to any listed security, its Market Price, and with respect to any property or assets, other than cash or listed securities, the fair value thereof determined in good faith by the Board of Directors.

“Holder” means any holder of Series B1/B2/B3/B4 Preferred Stock, all of such holders being the “Holders.”

“Initial Issue Date” shall mean: (a) with respect to the Series B1 Preferred Stock, the date that shares of Series B1 Preferred Stock are first issued by the Corporation; (b) with respect to the Series B2 Preferred Stock, the date that shares of Series B2 Preferred Stock are first issued by the Corporation; (c) with respect to the Series B3 Preferred Stock, the date that shares of Series B3 Preferred Stock are first issued by the Corporation; and (d) with respect to the Series B4 Preferred Stock, the date that shares of Series B4 Preferred Stock are first issued by the Corporation.

“Junior Securities” shall have the meaning set forth in Section 8(a)(iii).

“Liquidation” shall have the meaning set forth in Section 5(a).

“Market Price” shall mean, as to any class of listed securities, the average of the closing prices of such security’s sales on all United States securities exchanges on which such security may at the time be listed, or, if there have been no sales on any such exchange on any day, the average of the highest bid and lowest asked prices on all such exchanges at the end of such day, or, if on any day such security is not so listed, the average of the representative bid and asked prices quoted by a Permitted Exchange, but not on the basis of “pink sheets, as of 4:00 P.M., New York time, on such day or any successor organization, in each such case averaged over a period of twenty-one (21) days consisting of the day (or if such day is not a trading day, the immediately preceding trading day) as of which “Market Price” is being determined and the twenty (20) consecutive trading days prior to such day.

“Parity Securities” shall have the meaning set forth in Section 8(a)(i).

“Participating Dividends” shall have the meaning set forth in Section 4.

“Permitted Exchange” means any of The New York Stock Exchange, The Nasdaq Global Select Market, The Nasdaq Global Market, The Nasdaq Capital Market (or any of their respective successors).

“person” shall mean any individual, partnership, company, limited liability company, joint venture, association, joint-stock company, trust, unincorporated organization, government or agency or political subdivision thereof, or other entity.

“Preferred Stock” shall have the meaning set forth in the preamble to this Certificate of Designations.

“Preferred Stock Recapitalization Event” shall mean a Series B1 Recapitalization Event, Series B2 Recapitalization Event, Series B3 Recapitalization Event and/or Series B4 Recapitalization Event.

“Redemption Date” shall have the meaning set forth in Section 7(b).

“Redemption Notice” shall have the meaning set forth in Section 7(a).

“Redemption Price” shall have the meaning set forth in Section 7(a).

“Requisite Holders” shall mean the holders of at least a majority of the then outstanding shares of Series B1/B2/B3/B4 Preferred Stock.

“SEC” shall have the meaning set forth in Section 8(b).

“Securities Act” shall mean the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Senior Securities” shall have the meaning set forth in Section 8(a)(i).

“Series B1 Preferred Stock” shall have the meaning set forth in Section 1(a).

“Series B1 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B1 Preferred Stock.

“Series B1 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B1 Preferred Stock on which each of the Series B Conditions are true.

“Series B1 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B1 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B2 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B2 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B3 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B3 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B4 Conditions” shall mean: (a) the closing price of the Common Stock on any Permitted Exchange has been equal to or exceeded the price that is equal to three times (3x) the Series B4 Conversion Price for 180 calendar days; (b) the 50-day average trading volume of the Common Stock on the Permitted Exchange is greater than 500,000 shares (subject to adjustment for any stock dividend, stock split, stock combination or other similar transaction); and (c) the presentation by the Company at an appropriate medical conference of the “Overall Survival” data as defined in the ILLUMINATE-301 study protocol.

“Series B1/B2/B3/B4 Preferred Stock” shall have the meaning set forth in Section 1(c).

“Series B2 Preferred Stock” shall have the meaning set forth in Section 1(b).

“Series B2 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B2 Preferred Stock.

“Series B2 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B2 Preferred Stock on which each of the Series B2 Conditions are true.

“Series B3 Preferred Stock” shall have the meaning set forth in Section 1(c).

“Series B3 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B3 Preferred Stock.

“Series B3 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B3 Preferred Stock on which each of the Series B3 Conditions are true.

“Series B4 Preferred Stock” shall have the meaning set forth in Section 1(c).

“Series B4 Recapitalization Event” shall mean any stock dividend, stock split, combination, reorganization, recapitalization, reclassification, or other similar event involving a change in the capital structure of the Series B4 Preferred Stock.

“Series B4 Transition Date” shall mean the first date following the 2-year anniversary of the Initial Issue Date of the Series B4 Preferred Stock on which each of the Series B4 Conditions are true.

“Stated Value” shall mean (a) the per share stated value for a share of Series B1 Preferred Stock of \$152.00, (b) the per share stated value for a share of Series B2 Preferred Stock of \$152.00, (c) the per share stated value for a share of Series B3 Preferred Stock of \$182.00, or (d) the per share stated value for a share of Series B4 Preferred Stock of \$182.00.

“subsidiary” means, with respect to any person, (a) a company a majority of whose capital stock with voting power, under ordinary circumstances, to elect directors is at the time, directly or indirectly, owned by such person, by a subsidiary of such person, or by such person and one or more subsidiaries of such person, (b) a partnership in which such person or a subsidiary of such person is, at the date of determination, a general partner of such partnership, or (c) any other person (other than a company) in which such person, a subsidiary of such person or such person and one or more subsidiaries of such person, directly or indirectly, at the date of determination thereof, has (i) at least a majority ownership interest, (ii) the power to elect or direct the election of the directors or other governing body of such person, or (iii) the power to direct or cause the direction of the affairs or management of such person. For purposes of this definition, a person is deemed to own any capital stock or other ownership interest if such person has the right to acquire such capital stock or other ownership interest, whether through the exercise of any purchase option, conversion privilege or similar right.

“Subsidiary” shall mean a subsidiary of the Corporation.

SECTION 3 Voting Rights.

(a) General. The Series B1/B2/B3/B4 Preferred Stock is non-voting stock. Except as otherwise provided by the DGCL, other applicable law or as provided in this Certificate of Designations, the holders of Series B1/B2/B3/B4 Preferred Stock shall not be entitled to vote (or render written consents) on any matter submitted for a vote of (or written consents in lieu of a vote as permitted by the DGCL, the Certificate of Incorporation and the Bylaws) holders of Common Stock.

(b) Protective Provisions. Until the earlier of (x) the date on which less than 25% of the shares of Series B1/B2/B3/B4 Preferred Stock are outstanding after the applicable Initial Issue Date of the Series B1/B2/B3/B4 Preferred Stock, (y) the Series B1 Transition Date, Series B2 Transition Date, Series B3 Transition Date, or the Series B4 Transition Date, as the case may be and (z) the effective date of a Deemed Liquidation, the Corporation shall not, and shall not permit any of its Subsidiaries to, directly or indirectly, without the affirmative vote (or written consent as permitted by the DGCL, the Certificate of Incorporation and Bylaws) of the Requisite Holders, voting (or consenting) as a separate class:

(i) amend, alter, modify or repeal (whether by merger, consolidation or otherwise) this Certificate of Designations, the Certificate of Incorporation or the Bylaws in any manner that adversely affects the rights, preferences, privileges or the restrictions provided for the benefit of, the Series B1/B2/B3/B4 Preferred Stock;

(ii) authorize, create, designate, issue or sell any (A) class or series of capital stock (including shares of treasury stock) that would be classified as Senior Securities or Parity Securities or (B) rights, options, warrants or other securities (including debt securities) convertible into or exercisable or exchangeable for capital stock or any equity security or having any other equity feature, in each case, that would be classified as either Senior Securities or Parity Securities, except as pursuant to the conversion or exercise of securities issued and outstanding as of the Initial Issue Date of the Series B1 Preferred Stock or pursuant to any agreement in effect on or prior to the Initial Issue Date of the Series B1 Preferred Stock;

(iii) purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend, or make any distribution on, any shares of capital stock of the Corporation, other than redemptions of or dividends or distributions on the Series B1/B2/B3/B4 Preferred Stock as expressly authorized herein; or

(iv) enter into any agreement to do any of the foregoing that is not expressly made conditional on obtaining the affirmative vote or written consent of the Requisite Holders.

SECTION 4 Dividends.

If the Board of Directors shall declare a dividend or other distribution payable upon the then outstanding shares of Common Stock, whether in cash, in kind or in other securities or property, the holders of the outstanding shares of Series B1/B2/B3/B4 Preferred Stock shall be entitled to the amount of dividends as would be payable in respect of the number of shares of Common Stock into which the shares of Series B1/B2/B3/B4 Preferred Stock held by each holder thereof could be converted, without regard to any restrictions on conversion, in accordance with the provisions of Section 6 hereof, such number to be determined as of the record date for determination of holders of Common Stock entitled to receive such dividend or, if no such record date is established, as of the date of such dividend ("Participating Dividends"). Participating Dividends are payable at the same time as and when dividends on the Common Stock are paid to the holders of Common Stock.

SECTION 5 Liquidation Preference.

(a) Liquidation Preference of Series B1/B2/B3/B4 Preferred Stock. Subject to Section 5(b) and Section 5(f) below, in the event of any liquidation, dissolution, or winding up of the Corporation whether voluntary or involuntary, or in the event of its insolvency (a "Liquidation") or Deemed Liquidation, the holders of Series B1/B2/B3/B4 Preferred Stock shall be entitled to have set apart for them, or to be paid, out of the assets of the Corporation available for distribution to stockholders (whether such assets are capital, surplus or earnings) after provision for payment of all debts and liabilities of the Corporation in accordance with the DGCL, before any distribution or payment is made with respect to any shares of Junior Securities and subject to the liquidation rights and preferences of any class or series of Senior Securities and Parity Securities, an amount equal to the applicable Stated Value per share of Series B1/B2/B3/B4 Preferred Stock (which amount shall be subject to an equitable adjustment in the event of any Preferred Stock Recapitalization Event).

(b) Insufficient Assets. If, upon any Liquidation or Deemed Liquidation, the assets legally available for distribution among the holders of the Series B1/B2/B3/B4 Preferred Stock and any Parity Securities of the Corporation shall be insufficient to permit payment to such holders of the full preferential amounts as provided for in Section 5(a) above, then such holders shall share ratably in any distribution of available assets according to the respective amounts which would otherwise be payable with respect to the securities held by them upon such liquidating distribution if all amounts payable on or with respect to such securities were paid in full, based upon the aggregate liquidation value payable upon all shares of Series B1/B2/B3/B4 Preferred Stock and any Parity Securities then outstanding.

(c) Distribution to Junior Securities. After such payment shall have been made in full to the holders of the Series B1/B2/B3/B4 Preferred Stock, or funds necessary for such payment shall have been set aside by the Corporation in trust for the account of holders of the Series B1/B2/B3/B4 Preferred Stock so as to be available for such payment, the remaining assets available for distribution shall be distributed ratably among the holders of the Junior Securities in accordance with the terms of such securities.

(d) Distributions Other than Cash. Whenever the distribution provided for in this Section 5 shall be payable in property other than cash, the value of such distribution shall be the Fair Market Value thereof. All distributions (including distributions other than cash) made hereunder shall be made *pro rata* to the holders of Series B1/B2/B3/B4 Preferred Stock.

(e) Equitable Adjustments. The amounts to be paid or set aside for payment as provided above in this Section 5 shall be proportionately increased or decreased in inverse relation to the change in the number of outstanding shares resulting from any Preferred Stock Recapitalization Event.

(f) Loss of Liquidation Preferences. Notwithstanding anything to the contrary in this Section 5: (i) from and after the Series B1 Transition Date, the holders of Series B1 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation; (ii) from and after the Series B2 Transition Date, the holders of Series B2 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation; (iii) from and after the Series B3 Transition Date, the holders of Series B3 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation; and (iv) from and after the Series B4 Transition Date, the holders of Series B4 Preferred Stock shall not be entitled to any preferential payment pursuant to this Section 5 in connection with a Liquidation or Deemed Liquidation.

SECTION 6 Conversion Rights.

(a) General. Subject to and upon compliance with the provisions of this Section 6, each Holder shall be entitled, at its option, at any time and from time to time, to convert all or any such shares of Series B1/B2/B3/B4 Preferred Stock into the number of fully paid and nonassessable shares of Common Stock equal to the number obtained by dividing (i) the Stated Value of such Series B1/B2/B3/B4 Preferred Stock (which amount shall be subject to an equitable adjustments in the event of any Preferred Stock Recapitalization Event) by (ii) the Conversion Price in effect on the Conversion Date (determined as provided in this Section 6).

(b) Fractions of Shares. Fractional shares of Common Stock may not be issued in connection with any conversion. If any fractional interest in a share would be deliverable upon conversion, such fractional share shall be rounded down to the next whole number.

(c) Conversion Limitations. The Corporation shall not effect any conversion of the Series B1/B2/B3/B4 Preferred Stock, and the Holder shall not have the right to convert any portion of the Series B1/B2/B3/B4 Preferred Stock, pursuant to this Section 6 or otherwise, to the extent that after giving effect to such issuance after conversion, the Holder (together with the Holder's Affiliates, and any other persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation. For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon conversion of the Series B1/B2/B3/B4 Preferred Stock with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised shares of Series B1/B2/B3/B4 Preferred Stock beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Corporation subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 6, beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Corporation is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 6 applies, the determination of whether the Series B1/B2/B3/B4 Preferred Stock is convertible (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of the Series B1/B2/B3/B4 Preferred Stock is convertible shall be in the sole discretion of the Holder, and the submission of a Conversion Notice shall be deemed to be the Holder's determination of whether the Series B1/B2/B3/B4 Preferred Stock is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of the Series B1/B2/B3/B4 Preferred Stock is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Corporation shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 6, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Corporation's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Corporation or (C) a more recent written notice by the Corporation or its transfer agent setting forth the number of shares of Common Stock outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Corporation, including the Series B1/B2/B3/B4 Preferred Stock, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99%; *provided that*, by written notice to the Company, the Holder may from time to time increase or decrease the Beneficial Ownership Limitation to any other percentage not in excess of 19.99% specified in such notice; provided that (i) any increase from a limit set pursuant to this sentence or pursuant to a previous notice will not be effective until the sixty-first (61st) day after such notice (or subsequent notice) is delivered to the Company, and (ii) any such increase or decrease will apply only to the Holder and not to any other Holder of Series B1/B2/B3/B4 Preferred Stock. In accordance with the applicable listing standards, the restrictions set forth in this Section 6(c) will apply at any time when the Series B1/B2/B3/B4 Preferred Stock is outstanding, regardless of whether the Corporation then has a class of securities listed on a Permitted Exchange. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 6 to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation.

(d) Adjustments to Conversion Price.

(i) Upon Stock Dividends, Subdivisions or Splits. If, at any time after the date hereof, the number of shares of Common Stock outstanding is increased by a stock dividend payable in shares of Common Stock or by a subdivision or split-up of shares of Common Stock, then, following the record date for the determination of holders of Common Stock entitled to receive such stock dividend, or to be affected by such subdivision or split-up, the Conversion Price shall be appropriately decreased so that the number of shares of Common Stock issuable on conversion of Series B1/B2/B3/B4 Preferred Stock shall be increased in proportion to such increase in outstanding shares.

(ii) Upon Combinations. If, at any time after the date hereof, the number of shares of Common Stock outstanding is decreased by a combination of the outstanding shares of Common Stock into a smaller number of shares of Common Stock, then, following the record date to determine shares affected by such combination, the Conversion Price shall be appropriately increased so that the number of shares of Common Stock issuable on conversion of each share of Series B1/B2/B3/B4 Preferred Stock shall be decreased in proportion to such decrease in outstanding shares.

(iii) Capital Reorganization, Reclassification, Merger or Sale of Assets. If at any time or from time to time there shall be (A) a capital reorganization of the Common Stock, (B) a reclassification of the Common Stock (other than a subdivision, combination, or exchange of shares provided for elsewhere in this Section 6) or (C) a merger or consolidation of the Corporation with or into another corporation, or the sale of all or substantially all of the Corporation's properties and assets to any other person, then, as a part of such reorganization, reclassification, merger, or consolidation or sale, provision shall be made so that holders of Series B1/B2/B3/B4 Preferred Stock, as the case may be, shall thereafter be entitled to receive upon conversion of the Series B1/B2/B3/B4 Preferred Stock, the kind and amount of shares of stock or other securities or property of the Corporation, or of the successor corporation resulting from such merger, consolidation or sale, to which such holder would have been entitled if such holder had converted its shares of Series B1/B2/B3/B4 Preferred Stock immediately prior to such capital reorganization, reclassification, merger, consolidation or sale. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 6(d) with respect to the rights of the holders of the Series B1/B2/B3/B4 Preferred Stock after the reorganization, reclassification, merger, consolidation or sale to the end that the provisions of this Section 6(d), including adjustment of the Conversion Price then in effect for the Series B1/B2/B3/B4 Preferred Stock and the number of shares issuable upon conversion of the Series B1/B2/B3/B4 Preferred Stock) shall be applicable after that event in as nearly equivalent a manner as may be practicable.

(e) Exercise of Conversion Privilege. In order to exercise the conversion privilege, the holder of any share of Series B1/B2/B3/B4 Preferred Stock shall, if such Holder's shares are certificated, surrender the certificate evidencing such share of Series B1/B2/B3/B4 Preferred Stock, duly endorsed or assigned to the Corporation in blank, at any office or agency of the Corporation maintained for such purpose, accompanied by written notice (a "Conversion Notice") to the Corporation at such office or agency that the holder elects to convert such Series B1/B2/B3/B4 Preferred Stock or, if less than the entire amount thereof is to be converted, the portion thereof to be converted. Series B1/B2/B3/B4 Preferred Stock shall be deemed to have been converted immediately prior to the close of business on the date (the "Conversion Date") of surrender of such shares of Series B1/B2/B3/B4 Preferred Stock for conversion in accordance with the foregoing provisions, and at such time the rights of the Holder as a Holder shall cease, and the person or persons entitled to receive the Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such Common Stock as and after such time. As promptly as practicable on or after the Conversion Date, the Corporation shall issue and shall deliver at any office or agency of the Corporation maintained for the surrender of Series B1/B2/B3/B4 Preferred Stock a certificate or certificates for the number of full shares of Common Stock issuable upon conversion (or a notice of such issuance if uncertificated shares are issued). In the case of any certificate evidencing shares of Series B1/B2/B3/B4 Preferred Stock that is converted in part only, upon such conversion the Corporation shall also execute and deliver a new certificate evidencing the number of shares of Series B1/B2/B3/B4 Preferred Stock that are not converted (or a notice of such issuance if uncertificated shares are issued).

(f) Notice of Adjustment of Conversion Price. Whenever the provisions of Section 6(d) require that the Conversion Price be adjusted as herein provided, the Corporation shall compute the adjusted Conversion Price in accordance with Section 6(d) and shall prepare a certificate signed by the Corporation's chief executive officer or chief financial officer setting forth the adjusted Conversion Price and showing in reasonable detail the facts upon which such adjustment is based, and such certificate shall forthwith be filed at each office or agency maintained for such purpose for conversion of shares of Series B1/B2/B3/B4 Preferred Stock and mailed by the Corporation at its expense to all holders of Series B1/B2/B3/B4 Preferred Stock at their last addresses as they shall appear in the stock register.

(g) Corporation to Reserve Common Stock. The Corporation shall at all times reserve and keep available, free from preemptive rights, out of the authorized but unissued Common Stock or out of the Common Stock held in treasury, for the purpose of effecting the conversion of Series B1/B2/B3/B4 Preferred Stock, the full number of shares of Common Stock issuable upon the conversion of all outstanding shares of Series B1/B2/B3/B4 Preferred Stock. Before taking any action that would cause an adjustment reducing the Conversion Price below the then par value (if any) of the shares of Common Stock deliverable upon conversion of the Series B1/B2/B3/B4 Preferred Stock, the Corporation will take any corporate action that, in the opinion of its counsel, is necessary in order that the Corporation may validly and legally issue fully paid and non-assessable shares of Common Stock at such adjusted Conversion Price.

(h) Taxes on Conversions. The Corporation will pay any and all original issuance, transfer, stamp and other similar taxes that may be payable in respect of the issue or delivery of shares of Common Stock on conversion of Series B1/B2/B3/B4 Preferred Stock pursuant hereto. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issue and delivery of shares of Common Stock in a name other than that of the holder of the share(s) of Series B1/B2/B3/B4 Preferred Stock to be converted (nor shall the Corporation be responsible for any other taxes payable by the holders of the Series B1/B2/B3/B4 Preferred Stock), and no such issue or delivery shall be made unless and until the person requesting such issue has paid to the Corporation the amount of any such tax, or has established to the satisfaction of the Corporation that such tax has been paid.

SECTION 7 Redemption of Series B1/B2/B3/B4 Preferred Stock.

(a) Redemption at the Election of Holders of Series B1/B2/B3/B4 Preferred Stock. Subject to Section 7(c) and Section 7(f) below, at any time on or after the fifth (5th) anniversary of the Initial Issue Date of the applicable series of Series B1/B2/B3/B4 Preferred Stock, each Holder may elect, by delivering an irrevocable written notice (each a "Redemption Notice") to the Corporation, to have the Corporation redeem all or any portion of the Series B1/B2/B3/B4 Preferred Stock held by such Holder, as applicable, at a price per share (the "Redemption Price") equal to the Stated Value per share. The Corporation shall, unless otherwise prevented by law, redeem from such Holder, on the Redemption Date, the number of shares of Series B1/B2/B3/B4 Preferred Stock identified in such notice of election.

(b) Redemption Closing. The closing of the Corporation's redemption of the Series B1/B2/B3/B4 Preferred Stock pursuant to this Section 7 shall take place at 11:00 a.m. Eastern Time on the date set forth in the applicable Redemption Notice, provided that such date shall not be earlier than the fourteenth (14th) calendar day following the date of such Redemption Notice (the "Redemption Date"), at the Corporation's principal executive office or other mutually agreed upon location where the closing will occur. At the closing, the Corporation shall pay to each holder of Series B1/B2/B3/B4 Preferred Stock from whom shares of Series B1/B2/B3/B4 Preferred Stock are being redeemed an amount equal to the aggregate applicable Redemption Price for all such shares against receipt from such holder of the certificate or certificates, if any, duly endorsed or assigned to the Corporation in blank, representing the shares of Series B1/B2/B3/B4 Preferred Stock being redeemed. All such payments shall be made by wire transfer of immediately available funds or, if any such holder shall not have specified wire transfer instructions to the Corporation prior to the closing, by certified or official bank check payable to the order of the Holder. In the case of any certificate evidencing shares of Series B1/B2/B3/B4 Preferred Stock that is redeemed in part only, upon such redemption the Corporation shall also execute and deliver a new certificate (or a notice of such issuance if uncertificated shares are issued) evidencing the number of shares of Series B1/B2/B3/B4 Preferred Stock that are not redeemed.

(c) Insufficient Funds. If the Corporation shall not be permitted, or shall not have funds legally available in the amount necessary, to redeem all shares of Series B1/B2/B3/B4 Preferred Stock to be redeemed on the applicable Redemption Date, then the Series B1/B2/B3/B4 Preferred Stock shall be redeemed by the Corporation on such Redemption Date to the maximum extent the Corporation is permitted and has funds legally available on a *pro rata* basis, in accordance with the number of shares to be redeemed from each such Holder of Series B1/B2/B3/B4 Preferred Stock. The Corporation shall immediately redeem such shares of Series B1/B2/B3/B4 Preferred Stock upon the termination of such legal prohibition and at any time thereafter when additional funds of the Corporation are legally available for the redemption of such shares of Series B1/B2/B3/B4 Preferred Stock, such funds will be used, at the end of the next succeeding fiscal quarter, to redeem the balance of such shares, or such portion thereof for which funds are then legally available, on the basis set forth above. In the event that the Corporation has received multiple Redemption Notices with multiple Redemption Dates, the shares subject to redemption on the earliest Redemption Date shall be redeemed in priority to shares to be redeemed on later Redemption Date(s).

(d) Effect of Redemption. From and after the close of business on the applicable Redemption Date, unless there shall have been a default in the payment of the Redemption Price, all rights (except the right to receive the Redemption Price) of the Holders of Series B1/B2/B3/B4 Preferred Stock with respect to the shares of Series B1/B2/B3/B4 Preferred Stock to be redeemed on such date shall cease and terminate, and such shares shall not thereafter be transferred on the books of the Corporation or be deemed to be outstanding for any purpose whatsoever whether or not the certificates representing such shares have been received by the Corporation; provided, however, that, notwithstanding anything contained herein to the contrary, (i) if the Corporation defaults in the payment of the Redemption Price, the rights of such holders with respect to such shares of Series B1/B2/B3/B4 Preferred Stock shall continue until the Corporation cures such default, and (ii) without limiting any other rights of such holders, upon the occurrence of a subsequent Liquidation or Deemed Liquidation, with respect to the shares of Series B1/B2/B3/B4 Preferred Stock in respect of which the payment of the Redemption Price has not occurred, such holders shall be accorded the rights to liquidation preference payments as set forth in Section 5 hereof in respect of such remaining shares, as if no prior redemption request had been made. The shares of Series B1/B2/B3/B4 Preferred Stock not redeemed shall remain outstanding and entitled to all rights and preferences provided herein.

(e) Miscellaneous. Neither the Corporation nor any Subsidiary shall offer to purchase, redeem or acquire any shares of Series B1/B2/B3/B4 Preferred Stock other than pursuant to the terms of this Certificate of Designations or pursuant to a purchase offer made to all holders of Series B1/B2/B3/B4 Preferred Stock *pro rata* based upon the number of such shares owned by each such holder.

(f) Loss of Redemption Rights. Notwithstanding anything to the contrary in this Section 7: (i) from and after the Series B1 Transition Date, the Holders of Series B1 Preferred Stock shall not be entitled to redemption of their shares of Series B1 Preferred Stock pursuant to this Section 7; (ii) from and after the Series B2 Transition Date, the Holders of Series B2 Preferred Stock shall not be entitled to redemption of their shares of Series B2 Preferred Stock pursuant to this Section 7; (iii) from and after the Series B3 Transition Date, the Holders of Series B3 Preferred Stock shall not be entitled to redemption of their shares of Series B3 Preferred Stock pursuant to this Section 7; and (iv) from and after the Series B4 Transition Date, the Holders of Series B4 Preferred Stock shall not be entitled to redemption of their shares of Series B4 Preferred Stock pursuant to this Section 7. For the avoidance of doubt, any shares of Series B1/B2/B3/B4 Preferred Stock for which rights of redemption have been lost pursuant to this Section 7(f) and that were the subject of a Redemption Notice provided prior to the applicable Transition Date, shall no longer be subject to redemption and the Corporation shall be relieved of any obligation to redeem such shares in accordance with this Section 7.

SECTION 8 Ranking; Notification of Lost Rights; Legends.

(a) Ranking. For purposes of this Certificate of Designation, any stock of any class or classes of the Corporation shall be deemed to rank:

(i) prior to the shares of this Series B1/B2/B3/B4 Preferred Stock, either as to dividends or upon liquidation, if the holders of such class or classes shall be entitled to the receipt of dividends or of amounts distributable upon dissolution, liquidation or winding up of the Corporation, as the case may be, in preference or priority to the holders of shares of this Series B1/B2/B3/B4 Preferred Stock (any such securities, "Senior Securities");

(ii) pari passu to the shares of this Series B1/B2/B3/B4 Preferred Stock, either as to dividends or upon liquidation, if the holders of such class or classes shall be entitled to the receipt of dividends or of amounts distributable upon dissolution, liquidation or winding up of the Corporation, as the case may be, pari passu with the holders of shares of this Series B1/B2/B3/B4 Preferred Stock (any such securities, "Parity Securities");

(iii) junior to shares of this Series B1/B2/B3/B4 Preferred Stock, either as to dividends or upon liquidation, if such class shall be Common Stock or if the holders of shares of the Series B1/B2/B3/B4 Preferred Stock shall be entitled to receipt of dividends or of amounts distributable upon dissolution, liquidation or winding up of the Corporation, as the case may be, in preference or priority to the holders of shares of such class or classes (any such securities, "Junior Securities").

(b) Notification of Lost Rights. The Corporation shall provide notice to the Holders of the applicable series of Series B1/B2/B3/B4 Preferred Stock of the Series B1 Transition Date, Series B2 Transition Date, Series B3 Transition Date or Series B4 Transition Date, as the case may be, within the thirty (30) days following the applicable Transition Date, which notice will be deemed provided if delivered to such Holders in writing or via email, or if disclosed by the Company pursuant to a press release linked on the Company's website, in a Current Report on Form 8-K filed with the U.S. Securities and Exchange Commission (the "SEC"), in a Quarterly Report on Form 10-Q filed with the SEC, or in an Annual Report on Form 10-K filed with the SEC.

(c) Legends. In the event the Board of Directors determines that the shares of Series B1/B2/B3/B4 Preferred Stock shall be certificated, the Corporation shall include on such certificates any legends that the Board determines to be necessary or appropriate.

SECTION 9 Amendment and Waiver. Notwithstanding anything to the contrary herein, the amendment or waiver of any provisions of this Certificate of Designation can be approved by the Requisite Holders.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Designations, Preferences and Rights to be duly executed by its Senior V.P., General Counsel this 23rd day of December 2019.

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

Exhibit B

Form of Warrants

NEITHER THESE SECURITIES NOR THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), OR APPLICABLE STATE SECURITIES LAWS. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES.

[FORM OF WARRANT]

IDERA PHARMACEUTICALS, INC.

WARRANT TO PURCHASE COMMON STOCK OR SERIES B1 PREFERRED STOCK

Warrant No.: []
Number of Shares of Common Stock or Series B1 Preferred Stock: []
Date of Issuance: [] (“**Issuance Date**”)
Expiration Date: []¹ (“**Expiration Date**”)

Idera Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, , the registered holder hereof or its permitted assigns (the “**Holder**”), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, at any time or times on or after the Issuance Date, but not after 11:59 p.m., New York time, on the Expiration Date, the Warrant Shares (as defined below). Except as otherwise defined herein, capitalized terms in this Warrant to Purchase Common Stock or Series B1 Preferred Stock (including any Warrants to Purchase Common Stock or Series B1 Preferred Stock issued in exchange, transfer or replacement hereof, this “**Warrant**”), shall have the meanings set forth in Section 14. This Warrant is one of the Warrants to Purchase Common Stock or Series B1 Preferred Stock (the “**Warrants**”) issued in connection with the transactions contemplated by that certain Securities Purchase Agreement, dated as of December [], 2019 (the “**Subscription Date**”) by and between the Company, the holder and the other purchasers set forth on the schedule of purchasers thereto (the “**Securities Purchase Agreement**”).

¹ 7 years from the Issuance Date

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. Subject to the terms and conditions hereof (including, without limitation, the limitations set forth in Section 1(e)), this Warrant may be exercised by the Holder at any time or times on or after the Issuance Date, in whole or in part, by delivery (whether via facsimile, electronic mail or otherwise) of a written notice, in the form attached hereto as Exhibit A (the “**Exercise Notice**”), of the Holder’s election to exercise this Warrant. Within one (1) Trading Day following the delivery of the Exercise Notice, the Holder shall make payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the “**Aggregate Exercise Price**”) in cash by wire transfer of immediately available funds or, if the provisions of Section 1(d) are applicable, by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(d)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder (until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full), nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares and the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. On or before the first (1st) Trading Day following the date on which the Holder has delivered the applicable Exercise Notice, the Company shall transmit by facsimile or electronic mail an acknowledgment of confirmation of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Company’s transfer agent (the “**Transfer Agent**”). So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the earlier of (i) the second (2nd) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the first (1st) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) is delivered (such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall (X) provided that the Transfer Agent is participating in The Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer Program, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program (“**FAST**”), issue and dispatch by overnight courier to the address as specified in the Exercise Notice, a certificate, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record and beneficial owner of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be. If this Warrant is physically delivered to the Company in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 6(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional shares of Common Stock are to be issued upon the exercise of this Warrant, but rather the number of shares of Common Stock to be issued shall be rounded down to the nearest whole number. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent) which may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant. The Company’s obligations to issue and deliver Warrant Shares in accordance with the terms and subject to the conditions hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination; provided, however, that the Company shall not be required to deliver Warrant Shares with respect to an exercise prior to the Holder’s delivery of the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) with respect to such exercise.

(b) Company's Failure to Timely Deliver Securities. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 1(a) above pursuant to an exercise on or before the Share Delivery Date (other than a failure caused by incorrect or incomplete information provided by the Holder to the Company), and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence, the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice within three (3) Trading Days after the occurrence of a Buy-In, indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

(c) Cashless Exercise. Notwithstanding anything contained herein to the contrary, if a registration statement covering the issuance or resale of the shares of Common Stock that constitute Warrant Shares is not available for the issuance or resale, as applicable, of such Warrant Shares, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the “Net Number” of shares of Common Stock determined according to the following formula (a “**Cashless Exercise**”):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares of Common Stock with respect to which this Warrant is then being exercised.

B= as applicable: (i) the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock as of the time of the Holder’s execution of the applicable Exercise Notice if such Exercise Notice is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Closing Sale Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of “regular trading hours” on such Trading Day.

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the Securities Act of 1933, as amended (the “**Securities Act**”), the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 1(c).

(d) **Disputes.** In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 9.

(e) **Beneficial Ownership.** Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to the terms and conditions of this Warrant and any such exercise shall be null and void and treated as if never made, to the extent that immediately prior to or after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in excess of 4.99% (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (A) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 1(e). For purposes of this Section 1(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 1(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of this Warrant without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the “**SEC**”), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the “**Reported Outstanding Share Number**”). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder’s beneficial ownership, as determined pursuant to this Section 1(e), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the “**Reduction Shares**”) and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the Exchange Act), the number of shares so issued by which the Holder’s and the other Attribution Parties’ aggregate beneficial ownership exceeds the Maximum Percentage (the “**Excess Shares**”) shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage as specified in such notice not in excess of 19.99%; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the Exchange Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(e) to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(e) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant.

(f) Required Reserve Amount. So long as this Warrant remains outstanding, the Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock and Series B1 Preferred Stock at least equal to 100% of the maximum number of shares of Common Stock and Series B1 Preferred Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock or Series B1 Preferred Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "**Required Reserve Amount**"); provided that at no time shall the number of shares of Common Stock and Series B1 Preferred Stock reserved pursuant to this Section 1(f) be reduced other than in connection with any exercise of Warrants or such other event covered by Section 2 below. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock or Series B1 Preferred stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "**Authorized Share Allocation**"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock and Series B1 Preferred Stock reserved and allocated to any Person which ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock or Series B1 Preferred Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise).

(g) Insufficient Authorized Shares. If at any time while this Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock or Series B1 Preferred Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an "**Authorized Share Failure**"), then the Company shall promptly take all action reasonably necessary to increase the Company's authorized shares of Common Stock and Series B1 Preferred Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for this Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than 180² days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock and/or Series B1 Preferred Stock, as the case may be. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders' approval of such increase in authorized shares of Common Stock and/or Series B1 Preferred Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal.

2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES UPON SUBDIVISION OR COMBINATION OF COMMON STOCK OR SERIES B1 PREFERRED STOCK.

(a) Subdivisions or Combinations. If the Company at any time on or after the Issuance Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock or Series B1 Preferred Stock into a greater number of shares, the applicable Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of the applicable Warrant Shares will be proportionately increased. If the Company at any time on or after the Subscription Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock or Series B1 Preferred Stock into a smaller number of shares, the applicable Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of the applicable Warrant Shares will be proportionately decreased. Any adjustment under this Section 2(a) shall become effective at the close of business on the date the subdivision or combination becomes effective.

² NTD: The Company needs 180 days because they traditionally hold their ASM in early June.

(b) Voluntary Adjustment by Company. The Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

(c) Rights Upon Distribution of Assets. In addition to any adjustments pursuant to the other subsections of this Section 2, if, on or after the Issuance Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder’s right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

(d) Purchase Rights. In addition to any adjustments pursuant to the other subsections of Section 2 above, if at any time on or after the Issuance Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the “**Purchase Rights**”), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (provided, however, that to the extent that the Holder’s right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(e) Fundamental Transactions. The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3, including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, which is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Notwithstanding the foregoing, and without limiting Section 1(e) hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 3 to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a "**Corporate Event**"), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the "**Corporate Event Consideration**") which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Holder. The provisions of this Section 3 shall apply similarly and equally to successive Fundamental Transactions and Corporate Events. Notwithstanding the foregoing, in the event of a Change of Control (other than a Change of Control which was not approved by the Board of Directors, as to which this right shall not apply), at the request of the Holder delivered before the 30th day after such Change of Control, the Company (or the Successor Entity) shall purchase this Warrant from the Holder by paying to the Holder, within five (5) Business Days after such request (or, if later, on the effective date of the Change of Control), an amount equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the effective date of such Change of Control, payable in cash; provided, that if the applicable Change of Control was not approved by the Company's Board of Directors, the Black-Scholes Value of the remaining unexercised portion of this Warrant shall be payable at the option of the Company in either (x) Common Stock, whereby the Company would be continually obligated to actively settle shares of Common Stock in the event insufficient authorized shares of Common Stock were available (or corresponding Corporate Event Consideration, as applicable) valued at the value of the consideration received by the shareholders in such Change of Control or (y) cash.

3. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its certificate of incorporation or by-laws, or through any reorganization, transfer of assets, consolidation, merger, scheme, arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all of the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock or Series B1 Preferred Stock receivable upon the exercise of this Warrant above the applicable Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock or Series B1 Preferred Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock and Series B1 Preferred Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock and Series B1 Preferred Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

4. WARRANT HOLDER NOT DEEMED A STOCKHOLDER. Except as otherwise specifically provided herein, the Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of capital stock of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

5. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 5(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 5(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company 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, of any indemnification undertaking by the Holder to the Company in customary form (but without the obligation to post a bond) and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 5(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 5(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 5(a) or Section 5(c), the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

6. NOTICES. Whenever notice is required to be given under this Warrant, including, without limitation, an Exercise Notice, unless otherwise provided herein, such notice shall be given in writing, (i) if delivered (a) from within the domestic United States, by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, electronic mail or by facsimile or (b) from outside the United States, by International Federal Express, electronic mail or facsimile, and (ii) will be deemed given (A) if delivered by first-class registered or certified mail domestic, three (3) Business Days after so mailed, (B) if delivered by nationally recognized overnight carrier, one (1) Business Day after so mailed, (C) if delivered by International Federal Express, two (2) Business Days after so mailed and (D) at the time of transmission, if delivered by electronic mail to the email address specified in this Section 6 prior to 5:00 p.m. (New York time) on a Trading Day, (E) the next Trading Day after the date of transmission, if delivered by electronic mail to the email address specified in this Section 7 on a day that is not a Trading Day or later than 5:00 p.m. (New York time) on any Trading Day and (F) if delivered by facsimile, upon electronic confirmation of delivery of such facsimile, and will be delivered and addressed as follows:

(i) If to the Company, to:

Idera Pharmaceuticals, Inc.
505 Eagleview Blvd., Suite 212
Exton, Pennsylvania 19341
Attn: Chief Financial Officer

with copies to:

Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, Pennsylvania 19103-2921
Attn: Joanne R. Soslow, Esq.
Email: kdeschaine@cooley.com

(ii) if to the Holder, at such address or other contact information delivered by the Holder to Company or as is on the books and records of the Company.

The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) immediately upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation; provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder; provided, further, that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice.

7. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended or waived and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

8. GOVERNING LAW; JURY TRIAL. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

9. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via facsimile or electronic mail within two (2) Business Days of receipt of the Exercise Notice or other event giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via facsimile or electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

10. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and any other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the holder of this Warrant shall be entitled, in addition to all other available remedies, to seek an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

11. TRANSFER. Subject to compliance with applicable federal and state securities laws, this Warrant and the Warrant Shares may be offered for sale, sold, transferred, pledged or assigned without the consent of the Company.

12. SEVERABILITY; CONSTRUCTION; HEADINGS. If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s). This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

13. DISCLOSURE. Upon receipt or delivery by the Company of any notice in accordance with the terms of this Warrant, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries, the Company shall contemporaneously with any such receipt or delivery publicly disclose such material, nonpublic information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, nonpublic information relating to the Company or its subsidiaries, the Company so shall indicate to such Holder contemporaneously with delivery of such notice, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries.

4. CERTAIN DEFINITIONS. For purposes of this Warrant, the following terms shall have the following meanings:

(a) “**Affiliate**” means any person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person, as such terms are used in and construed under Rule 405 under the Securities Act.

(b) “**Attribution Parties**” means, collectively, the Holder (together with the Holder’s Affiliates, and any other persons acting as a group together with the Holder or any of the Holder’s Affiliates. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(c) “**Bid Price**” means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported in the “pink sheets” by OTC Markets Group Inc. (formerly Pink Sheets LLC) as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 9. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

(d) “**Black Scholes Value**” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg determined as of the day immediately following the first public announcement of the applicable Change of Control, or, if the Change of Control is not publicly announced, the date the Change of Control is consummated, for pricing purposes and reflecting (i) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of this Warrant as of such date of request, (ii) an expected volatility equal to 60%, (iii) the underlying price per share used in such calculation shall be the greater of (A) the sum of the price per share being offered in cash, if any, plus the per share value of any non-cash consideration, if any, being offered in such Change of Control and (B) the greater of (x) the last Weighted Average Price immediately prior to the public announcement of such Change of Control and (y) the last Weighted Average Price immediately prior to the consummation of such Change of Control, (iv) a zero cost of borrow and (v) a 360 day annualization factor.

(e) “**Bloomberg**” means Bloomberg Financial Markets.

(f) “**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(g) “**Change of Control**” means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respects, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or (iii) a merger in connection with a bona fide acquisition by the Company of any Person in which (x) the gross consideration paid, directly or indirectly, by the Company in such acquisition is not greater than 20% of the Company’s market capitalization as calculated on the date of the consummation of such merger and (y) such merger does not contemplate a change to the identity of a majority of the board of directors of the Company. Notwithstanding anything herein to the contrary, any transaction or series of transactions that, directly or indirectly, results in the Company or the Successor Entity not having Common Stock or common stock, as applicable, registered under the Exchange Act and listed on an Eligible Market shall be deemed a Change of Control.

(h) “**Closing Bid Price**” and “**Closing Sale Price**” means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price, as the case may be, of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 9. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

(i) “**Common Stock**” means (i) the Company’s Common Stock, par value \$0.001 per share, and (ii) any capital stock into which such Common Stock shall have been changed or any capital stock resulting from a reclassification of such Common Stock.

(j) “**Convertible Securities**” means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(k) “**Eligible Market**” means The Nasdaq Capital Market, the NYSE American LLC, The Nasdaq Global Select Market, The Nasdaq Global Market or The New York Stock Exchange, Inc.

(l) “**Exercise Price**” means (x) \$[]³ per share of Common Stock if the Warrant Shares shall be shares of Common Stock or (y) \$[]⁴ per share of Series B1 Preferred Stock if the Warrant Shares shall be shares of Series B1 Preferred Stock, in each case, subject to adjustment as provided herein.

(m) “**Fundamental Transaction**” means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the Exchange Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the Exchange Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Subscription Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition which may be defective or inconsistent with the intended treatment of such instrument or transaction.

³ For the Series B1 and Series B2 Warrants, the exercise price is the lesser of the closing price and the average closing price for 5 prior trading days as of the date that the purchase agreement is signed (the “Reference Price”). For the Series B3 and Series B4 Warrants, the exercise price is 120% of the Reference Price.

⁴ 100x the applicable Common Stock exercise price.

(n) “**Group**” means a “group” as that term is used in Section 13(d) of the Exchange Act and as defined in Rule 13d-5 thereunder.

(o) “**Options**” means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(p) “**Parent Entity**” of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction.

(q) “**Person**” means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(r) “**Principal Market**” means the Nasdaq Capital Market.

(s) “**Series B1 Preferred Stock**” means (i) the Company’s Series B1 Convertible Preferred Stock, par value \$0.01 per share, and (ii) any capital stock into which such Series B1 Preferred Stock shall have been changed or any capital stock resulting from a reclassification of such capital stock.

(t) “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, for the Company’s primary trading market or quotation system with respect to the Common Stock that is in effect on the date of delivery of an applicable Exercise Notice.

(u) “**Subject Entity**” means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(v) “**Successor Entity**” means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(w) “**Trading Day**” means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

(x) “**Transaction Documents**” means any agreement entered into by and between the Company and the Holder, as applicable.

(y) “**Warrant Shares**” means [()] shares of fully paid non-assessable shares of Common Stock (as defined below); *provided that*, at the option of the Holder, from and after the [Series B1 Transition Date] [Series B2 Transition Date] [Series B3 Transition Date] [Series B4 Transition Date] (as such term is defined in that certain Certificate of Designations, Preferences and Rights of Series B1 Convertible Preferred Stock, Series B2 Convertible Preferred Stock, Series B3 Convertible Preferred Stock and Series B4 Convertible Preferred Stock of Idera Pharmaceuticals, Inc. filed with the Secretary of State of the State of Delaware on or about December [], 2019), if the Holder provides an irrevocable notice of election of such option to the Company, “**Warrant Shares**” shall mean [()]⁵ shares of fully paid non-assessable shares of Series B1 Preferred Stock (as defined below), each subject to adjustment as provided herein.

(z) “**Weighted Average Price**” means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported by Bloomberg through its “Volume at Price” function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. (formerly Pink OTC Markets Inc.). If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 9 but with the term “Weighted Average Price” being substituted for the term “Exercise Price.” All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

⁵ 1/100th of shares.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Warrant to Purchase Common Stock or Series B1 Preferred Stock to be duly executed as of the Issuance Date set out above.

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

EXERCISE NOTICE
TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS WARRANT TO
PURCHASE COMMON STOCK OR SERIES B1 PREFERRED STOCK
IDERA PHARMACEUTICALS, INC.

COMMON STOCK

The undersigned holder hereby exercises the right to purchase _____ shares of Common Stock (“**Warrant Shares**”) of Idera Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), evidenced by the attached Warrant to Purchase Common Stock or Series B1 Preferred Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as:

“Cash Exercise” with respect to _____ Warrant Shares; and/or

“Cashless Exercise” with respect to _____ Warrant Shares

Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$ _____ to the Company in accordance with the terms of the Warrant.

Delivery of Warrant Shares. The Company shall deliver to the holder _____ shares of Common Stock in accordance with the terms of the Warrant.

SERIES B1 PREFERRED STOCK

The undersigned holder hereby exercises the right to purchase _____ shares of Series B1 Preferred Stock (“**Warrant Shares**”) of Idera Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), evidenced by the attached Warrant to Purchase Common Stock or Series B1 Preferred Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

Payment of Exercise Price. The holder shall pay the Aggregate Exercise Price in the sum of \$ _____ to the Company in accordance with the terms of the Warrant.

Delivery of Warrant Shares. The Company shall deliver to the holder _____ shares of Series B1 Preferred Stock in accordance with the terms of the Warrant.

Date:

Name of Registered Holder

By: _____
Name:
Title:

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs [Transfer Agent] to issue the above indicated number of Warrant Shares on or prior to the applicable Share Delivery Date.

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

Exhibit C

Registration Rights Agreement

REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this "Agreement") is made as of December 23, 2019, by and between Idera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and the persons listed on the attached Schedule A who are signatories to this Agreement (collectively, the "Investors"). Unless otherwise defined herein, capitalized terms used in this Agreement have the respective meanings ascribed to them in Section 1.

RECITALS

WHEREAS, the Company and the Investors wish to provide for certain arrangements with respect to the registration of the Registrable Securities (as defined below) by the Company under the Securities Act (as defined below).

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth herein, and other consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

Section 1. Definitions

1.1. Certain Definitions. In addition to the terms defined elsewhere in this Agreement, as used in this Agreement, the following terms have the respective meanings set forth below:

- (a) "Board" shall mean the Board of Directors of the Company.
 - (b) "Commission" shall mean the Securities and Exchange Commission or any other federal agency at the time administering the Securities Act.
 - (c) "Common Stock" shall mean the common stock of the Company, par value \$0.001 per share.
 - (d) "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, or any similar successor federal statute and the rules and regulations thereunder, all as the same shall be in effect from time to time.
 - (e) "Other Securities" shall mean securities of the Company, other than Registrable Securities (as defined below).
 - (f) "Person" shall mean any individual, partnership, corporation, company, association, trust, joint venture, limited liability company, unincorporated organization, entity or division, or any government, governmental department or agency or political subdivision thereof.
-

(g) “Registrable Securities” shall mean the shares of Common Stock and any Common Stock issued or issuable upon the exercise or conversion of any other securities (whether equity, debt or otherwise) of the Company now owned or hereafter acquired by any of the Investors. Registrable Securities shall cease to be Registrable Securities upon the earliest to occur of the following events: (i) such Registrable Securities have been sold pursuant to an effective Registration Statement; (ii) such Registrable Securities have been sold by the Investors pursuant to Rule 144 (or other similar rule), (iii) at any time after any of the Investors become an affiliate of the Company, such Registrable Securities may be resold by the Investor holding such Registrable Securities without limitations as to volume or manner of sale pursuant to Rule 144; or (iv) ten (10) years after the date of this Agreement. For purposes of this definition, in order to determine whether an Investor is an “affiliate” (as such term is defined and used in Rule 144, and including for determining whether volume or manner of sale limitations of Rule 144 apply) the parties will assume that all convertible securities (whether equity, debt or otherwise) have been converted into Common Stock.

(h) The terms “register,” “registered” and “registration” shall refer to a registration effected by preparing and filing a Registration Statement in compliance with the Securities Act, and such Registration Statement becoming effective under the Securities Act.

(i) “Registration Expenses” shall mean all expenses incurred by the Company in effecting any registration pursuant to this Agreement, including, without limitation, all registration, qualification, and filing fees, printing expenses, escrow fees, fees and disbursements of counsel for the Company, up to \$50,000 of reasonable legal expenses of one special counsel for Investors (if different from the Company’s counsel and if such counsel is reasonably approved by the Company) in connection with the preparation and filing of the Resale Registration Shelf (as defined below), and up to \$50,000 of reasonable legal expenses of one special counsel for Investors (if different from the Company’s counsel and if such counsel is reasonably approved by the Company) per underwritten public offering, blue sky fees and expenses, and expenses of any regular or special audits incident to or required by any such registration, but shall not include Selling Expenses.

(j) “Registration Statement” means any registration statement of the Company filed with, or to be filed with, the SEC under the Securities Act, including the related prospectus, amendments and supplements to such registration statement, including pre- and post-effective amendments, and all exhibits and all material incorporated by reference in such registration statement as may be necessary to comply with applicable securities laws other than a registration statement (and related prospectus) filed on Form S-4 or Form S-8 or any successor forms thereto.

(k) “Rule 144” shall mean Rule 144 as promulgated by the Commission under the Securities Act, as such rule may be amended from time to time, or any similar successor rule that may be promulgated by the Commission.

(l) “Securities Act” shall mean the Securities Act of 1933, as amended, or any similar successor federal statute and the rules and regulations thereunder, all as the same shall be in effect from time to time.

(m) “Selling Expenses” shall mean all underwriting discounts and selling commissions applicable to the sale of Registrable Securities, the fees and expenses of any legal counsel (except as provided in the definition of “Registration Expenses”) and any other advisors any of the Investors engage and all similar fees and commissions relating to the Investors’ disposition of the Registrable Securities.

Section 2.
Resale Registration Rights

2.1. Resale Registration Rights.

(a) Following demand by any Investor, the Company shall file with the Commission a Registration Statement on Form S-3 (except if the Company is not then eligible to register for resale the Registrable Securities on Form S-3, in which case such registration shall be on another appropriate form in accordance with the Securities Act) covering the resale of the Registrable Securities by the Investors (the “Resale Registration Shelf”), and the Company shall file such Resale Registration Shelf as promptly as reasonably practicable following such demand, and in any event within sixty (60) days of such demand. Such Resale Registration Shelf shall include a “final” prospectus, including the information required by Item 507 of Regulation S-K of the Securities Act, as provided by the Investors in accordance with Section 2.7. Notwithstanding the foregoing, before filing the Resale Registration Shelf, the Company shall furnish to the Investors a copy of the Resale Registration Shelf and afford the Investors an opportunity to review and comment on the Resale Registration Shelf. The Company’s obligation pursuant to this Section 2.1(a) is conditioned upon the Investors providing the information contemplated in Section 2.7.

(b) The Company shall use its reasonable best efforts to cause the Resale Registration Shelf and related prospectuses to become effective as promptly as practicable after filing. The Company shall use its reasonable best efforts to cause such Registration Statement to remain effective under the Securities Act until the earlier of the date (i) all Registrable Securities covered by the Resale Registration Shelf have been sold or may be sold freely without limitations or restrictions as to volume or manner of sale pursuant to Rule 144 or (ii) all Registrable Securities covered by the Resale Registration Shelf otherwise cease to be Registrable Securities pursuant to the definition of Registrable Securities. The Company shall promptly, and within two (2) business days after the Company confirms effectiveness of the Resale Registration Shelf with the Commission, notify the Investors of the effectiveness of the Resale Registration Shelf.

(c) Notwithstanding anything contained herein to the contrary, the Company shall not be obligated to effect, or to take any action to effect, a registration pursuant to Section 2.1(a):

(i) if the Company has and maintains an effective Registration Statement on Form S-3ASR that provides for the resale of an unlimited number of securities by selling stockholders (a “Company Registration Shelf”);

(ii) during the period forty-five (45) days prior to the Company’s good faith estimate of the date of filing of a Company Registration Shelf; or

(iii) if the Company has caused a Registration Statement to become effective pursuant to this Section 2.1 during the prior twelve (12) month period.

(d) If the Company has a Company Registration Shelf in place at any time in which the Investors make a demand pursuant to Section 2.1(a), the Company shall file with the Commission, as promptly as practicable, and in any event within fifteen (15) business days after such demand, a “final” prospectus supplement to its Company Registration Shelf covering the resale of the Registrable Securities by the Investors (the “Prospectus”); provided, however, that the Company shall not be obligated to file more than one Prospectus pursuant to this Section 2.1(d) in any six month period to add additional Registrable Securities to the Company Registration Shelf that were acquired by the Investors other than directly from the Company or in an underwritten public offering by the Company. The Prospectus shall include the information required under Item 507 of Regulation S-K of the Securities Act, which information shall be provided by the Investors in accordance with Section 2.7. Notwithstanding the foregoing, before filing the Prospectus, the Company shall furnish to the Investors a copy of the Prospectus and afford the Investors an opportunity to review and comment on the Prospectus.

(e) Deferral and Suspension. At any time after being obligated to file a Resale Registration Shelf or Prospectus, or after any Resale Registration Shelf has become effective or a Prospectus filed with the Commission, the Company may defer the filing of or suspend the use of any such Resale Registration Shelf or Prospectus, upon giving written notice of such action to the Investors with a certificate signed by the Principal Executive Officer of the Company stating that in the good faith judgment of the Board, the filing or use of any such Resale Registration Shelf or Prospectus covering the Registrable Securities would be seriously detrimental to the Company or its stockholders at such time and that the Board concludes, as a result, that it is in the best interests of the Company and its stockholders to defer the filing or suspend the use of such Resale Registration Shelf or Prospectus at such time. The Company shall have the right to defer the filing of or suspend the use of such Resale Registration Shelf or Prospectus for a period of not more than one hundred twenty (120) days from the date the Company notifies the Investors of such deferral or suspension; provided that the Company shall not exercise the right contained in this Section 2.1(e) more than once in any twelve month period. In the case of the suspension of use of any effective Resale Registration Shelf or Prospectus, the Investors, immediately upon receipt of notice thereof from the Company, shall discontinue any offers or sales of Registrable Securities pursuant to such Resale Registration Shelf or Prospectus until advised in writing by the Company that the use of such Resale Registration Shelf or Prospectus may be resumed. In the case of a deferred Prospectus or Resale Registration Shelf filing, the Company shall provide prompt written notice to the Investors of (i) the Company’s decision to file or seek effectiveness of the Prospectus or Resale Registration Shelf, as the case may be, following such deferral and (ii) in the case of a Resale Registration Shelf, the effectiveness of such Resale Registration Shelf. In the case of either a suspension of use of, or deferred filing of, any Resale Registration Shelf or Prospectus, the Company shall not, during the pendency of such suspension or deferral, be required to take any action hereunder (including any action pursuant to Section 2.2 hereof) with respect to the registration or sale of any Registrable Securities pursuant to any such Resale Registration Shelf, Company Registration Shelf or Prospectus.

(f) Other Securities. Subject to Section 2.2(e) below, any Resale Registration Shelf or Prospectus may include Other Securities, and may include securities of the Company being sold for the account of the Company; provided such Other Securities are excluded first from such Registration Statement in order to comply with any applicable laws or request from any Government Entity, Nasdaq or any applicable listing agency. For the avoidance of doubt, no Other Securities may be included in an underwritten offering pursuant to Section 2.2 without the consent of the Investors.

2.2. Sales and Underwritten Offerings of the Registrable Securities.

(a) Notwithstanding any provision contained herein to the contrary, the Investors, collectively, shall and subject to the limitations set forth in this Section 2.2, be permitted one underwritten public offering per calendar year, but no more than three underwritten public offerings in total, to effect the sale or distribution of Registrable Securities.

(b) If the Investors intend to effect an underwritten public offering pursuant to a Resale Registration Shelf or Company Registration Shelf to sell or otherwise distribute Registrable Securities, they shall so advise the Company and provide as much notice to the Company as reasonably practicable (and in any event not less than fifteen (15) business days prior to the Investors' request that the Company file a prospectus supplement to a Resale Registration Shelf or Company Registration Shelf).

(c) In connection with any offering initiated by the Investors pursuant to this Section 2.2 involving an underwriting of shares of Registrable Securities, the Investors shall be entitled to select the underwriter or underwriters for such offering, subject to the consent of the Company, such consent not to be unreasonably withheld, conditioned or delayed.

(d) In connection with any offering initiated by the Investors pursuant to this Section 2.2 involving an underwriting of shares of Registrable Securities, the Company shall not be required to include any of the Registrable Securities in such underwriting unless the Investors (i) enter into an underwriting agreement in customary form with the underwriter or underwriters, (ii) accept customary terms in such underwriting agreement with regard to representations and warranties relating to ownership of the Registrable Securities and authority and power to enter into such underwriting agreement and (iii) complete and execute all questionnaires, powers of attorney, custody agreements, indemnities and other documents as may be requested by such underwriter or underwriters. Further, the Company shall not be required to include any of the Registrable Securities in such underwriting if (Y) the underwriting agreement proposed by the underwriter or underwriters contains representations, warranties or conditions that are not reasonable in light of the Company's then-current business or (Z) the underwriter, underwriters or the Investors require the Company to participate in any marketing, road show or comparable activity that may be required to complete the orderly sale of shares by the underwriter or underwriters.

(e) If the total amount of securities to be sold in any offering initiated by the Investors pursuant to this Section 2.2 involving an underwriting of shares of Registrable Securities exceeds the amount that the underwriters determine in their sole discretion is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities (subject in each case to the cutback provisions set forth in this Section 2.2(e)), that the underwriters and the Company determine in their sole discretion shall not jeopardize the success of the offering. If the underwritten public offering has been requested pursuant to Section 2.2(a) hereof, the number of shares that are entitled to be included in the registration and underwriting shall be allocated in the following manner: (a) first, shares of Company equity securities that the Company desires to include in such registration shall be excluded and (b) second, Registrable Securities requested to be included in such registration by the Investors shall be excluded. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round down the number of shares allocated to any of the Investors to the nearest 100 shares.

2.3. Fees and Expenses. All Registration Expenses incurred in connection with registrations pursuant to this Agreement shall be borne by the Company. All Selling Expenses relating to securities registered on behalf of the Investors shall be borne by the Investors.

2.4. Registration Procedures. In the case of each registration of Registrable Securities effected by the Company pursuant to Section 2.1 hereof, the Company shall keep the Investors advised as to the initiation of each such registration and as to the status thereof. The Company shall use its reasonable best efforts, within the limits set forth in this Section 2.4, to:

(a) prepare and file with the Commission such amendments and supplements to such Registration Statement and the prospectuses used in connection with such Registration Statement as may be necessary to keep such Registration Statement effective and current and comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such Registration Statement;

(b) furnish to the Investors such numbers of copies of a prospectus, including preliminary prospectuses, in conformity with the requirements of the Securities Act, and such other documents as the Investors may reasonably request in order to facilitate the disposition of Registrable Securities;

(c) use its reasonable best efforts to register and qualify the Registrable Securities covered by such Registration Statement under such other securities or blue sky laws of such jurisdictions in the United States as shall be reasonably requested by the Investors, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions;

(d) in the event of any underwritten public offering, and subject to Section 2.2(d), enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter of such offering and take such other usual and customary action as the Investors may reasonably request in order to facilitate the disposition of such Registrable Securities;

(e) notify the Investors at any time when a prospectus relating to a Registration Statement covering any Registrable Securities is required to be delivered under the Securities Act of the happening of any event as a result of which the prospectus included in such Registration Statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing. The Company shall use its reasonable best efforts to amend or supplement such prospectus in order to cause such prospectus not to include any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing;

(f) provide a transfer agent and registrar for all Registrable Securities registered pursuant to such Registration Statement and, if required, a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(g) if requested by an Investor, use reasonable best efforts to cause the Company's transfer agent to remove any restrictive legend from any Registrable Securities, within two business days following such request;

(h) cause to be furnished, at the request of the Investors, on the date that Registrable Securities are delivered to underwriters for sale in connection with an underwritten offering pursuant to this Agreement, (i) an opinion, dated such date, of the counsel representing the Company for the purposes of such registration, in form and substance as is customarily given to underwriters in an underwritten public offering, addressed to the underwriters, and (ii) a letter or letters from the independent certified public accountants of the Company, in form and substance as is customarily given by independent certified public accountants to underwriters in an underwritten public offering, addressed to the underwriters; and

(i) cause all such Registrable Securities included in a Registration Statement pursuant to this Agreement to be listed on each securities exchange or other securities trading markets on which Common Stock is then listed.

2.5. The Investors Obligations.

(a) Discontinuance of Distribution. The Investors agree that, upon receipt of any notice from the Company of the occurrence of any event of the kind described in Section 2.4(e) hereof, the Investors shall immediately discontinue disposition of Registrable Securities pursuant to any Registration Statement covering such Registrable Securities until the Investors' receipt of the copies of the supplemented or amended prospectus contemplated by Section 2.4(e) hereof or receipt of notice that no supplement or amendment is required and that the Investors' disposition of the Registrable Securities may be resumed. The Company may provide appropriate stop orders to enforce the provisions of this Section 2.5(a).

(b) Compliance with Prospectus Delivery Requirements. The Investors covenant and agree that they shall comply with the prospectus delivery requirements of the Securities Act as applicable to them or an exemption therefrom in connection with sales of Registrable Securities pursuant to any Registration Statement filed by the Company pursuant to this Agreement.

(c) Notification of Sale of Registrable Securities. The Investors covenant and agree that they shall notify the Company following the sale of Registrable Securities to a third party as promptly as reasonably practicable, and in any event within thirty (30) days, following the sale of such Registrable Securities.

2.6. Indemnification.

(a) To the extent permitted by law, the Company shall indemnify the Investors, and, as applicable, their officers, directors, and constituent partners, legal counsel for each Investor and each Person controlling the Investors, with respect to which registration, related qualification, or related compliance of Registrable Securities has been effected pursuant to this Agreement, and each underwriter, if any, and each Person who controls any underwriter within the meaning of the Securities Act against all claims, losses, damages, or liabilities (or actions in respect thereof) to the extent such claims, losses, damages, or liabilities arise out of or are based upon (i) any untrue statement (or alleged untrue statement) of a material fact contained in any prospectus or other document (including any related Registration Statement) incident to any such registration, qualification, or compliance, or (ii) any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law applicable to the Company and relating to action or inaction required of the Company in connection with any such registration, qualification, or compliance; and the Company shall pay as incurred to the Investors, each such underwriter, and each Person who controls the Investors or underwriter, any legal and any other expenses reasonably incurred in connection with investigating or defending any such claim, loss, damage, liability, or action; provided, however, that the indemnity contained in this Section 2.6(a) shall not apply to amounts paid in settlement of any such claim, loss, damage, liability, or action if settlement is effected without the consent of the Company (which consent shall not unreasonably be withheld); and provided, further, that the Company shall not be liable in any such case to the extent that any such claim, loss, damage, liability, or expense arises out of or is based upon any violation by such Investor of the obligations set forth in Section 2.5 hereof or any untrue statement or omission contained in such prospectus or other document based upon written information furnished to the Company by the Investors, such underwriter, or such controlling Person and stated to be for use therein.

(b) To the extent permitted by law, each Investor (severally and not jointly) shall, if Registrable Securities held by such Investor are included for sale in the registration and related qualification and compliance effected pursuant to this Agreement, indemnify the Company, each of its directors, each officer of the Company who signs the applicable Registration Statement, each legal counsel and each underwriter of the Company's securities covered by such a Registration Statement, each Person who controls the Company or such underwriter within the meaning of the Securities Act against all claims, losses, damages, and liabilities (or actions in respect thereof) arising out of or based upon (i) any untrue statement (or alleged untrue statement) of a material fact contained in any such Registration Statement, or related document, or (ii) any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by such Investor of Section 2.5 hereof, the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law applicable to such Investor and relating to action or inaction required of such Investor in connection with any such registration and related qualification and compliance, and shall pay as incurred to such persons, any legal and any other expenses reasonably incurred in connection with investigating or defending any such claim, loss, damage, liability, or action, in each case only to the extent that such untrue statement (or alleged untrue statement) or omission (or alleged omission) is made in (and such violation pertains to) such Registration Statement or related document in reliance upon and in conformity with written information furnished to the Company by such Investor and stated to be specifically for use therein; provided, however, that the indemnity contained in this Section 2.6(b) shall not apply to amounts paid in settlement of any such claim, loss, damage, liability, or action if settlement is effected without the consent of such Investor (which consent shall not unreasonably be withheld); provided, further, that such Investor's liability under this Section 2.6(b) (when combined with any amounts such Investor is liable for under Section 2.6(d)) shall not exceed such Investor's net proceeds from the offering of securities made in connection with such registration.

(c) Promptly after receipt by an indemnified party under this Section 2.6 of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against an indemnifying party under this Section 2.6, notify the indemnifying party in writing of the commencement thereof and generally summarize such action. The indemnifying party shall have the right to participate in and to assume the defense of such claim; provided, however, that the indemnifying party shall be entitled to select counsel for the defense of such claim with the approval of any parties entitled to indemnification, which approval shall not be unreasonably withheld; provided further, however, that if either party reasonably determines that there may be a conflict between the position of the Company and the Investors in conducting the defense of such action, suit, or proceeding by reason of recognized claims for indemnity under this Section 2.6, then counsel for such party shall be entitled to conduct the defense to the extent reasonably determined by such counsel to be necessary to protect the interest of such party. The failure to notify an indemnifying party promptly of the commencement of any such action, if prejudicial to the ability of the indemnifying party to defend such action, shall relieve such indemnifying party, to the extent so prejudiced, of any liability to the indemnified party under this Section 2.6, but the omission so to notify the indemnifying party shall not relieve such party of any liability that such party may have to any indemnified party otherwise than under this Section 2.6.

(d) If the indemnification provided for in this Section 2.6 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, liability, claim, damage, or expense referred to therein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, liability, claim, damage, or expense in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other in connection with the statements or omissions that resulted in such loss, liability, claim, damage, or expense as well as any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission. In no event, however, shall (i) any amount due for contribution hereunder be in excess of the amount that would otherwise be due under Section 2.6(a) or Section 2.6(b), as applicable, based on the limitations of such provisions and (ii) a Person guilty of fraudulent misrepresentation (within the meaning of the Securities Act) be entitled to contribution from a Person who was not guilty of such fraudulent misrepresentation.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with an underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control; provided, however, that the failure of the underwriting agreement to provide for or address a matter provided for or addressed by the foregoing provisions shall not be a conflict between the underwriting agreement and the foregoing provisions.

(f) The obligations of the Company and the Investors under this Section 2.6 shall survive the completion of any offering of Registrable Securities in a Registration Statement under this Agreement or otherwise.

2.7. Information. The Investors shall furnish to the Company such information regarding the Investors and the distribution proposed by the Investors as the Company may reasonably request and as shall be reasonably required in connection with any registration referred to in this Agreement. The Investors agree to, as promptly as practicable (and in any event prior to any sales made pursuant to a prospectus), furnish to the Company all information required to be disclosed in order to make the information previously furnished to the Company by the Investors not misleading. The Investors agree to keep confidential the receipt of any notice received pursuant to Section 2.4(e) and the contents thereof, except as required pursuant to applicable law. Notwithstanding anything to the contrary herein, the Company shall be under no obligation to name the Investors in any Registration Statement if the Investors have not provided the information required by this Section 2.7 with respect to the Investors as a selling securityholder in such Registration Statement or any related prospectus.

2.8. Rule 144 Requirements. With a view to making available to the Investors the benefits of Rule 144 promulgated under the Securities Act and any other rule or regulation of the Commission that may at any time permit the Investors to sell Registrable Securities to the public without registration, the Company agrees to use its reasonable best efforts to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144 under the Securities Act at all times after the date hereof;

(b) file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act;

(c) prior to the filing of the Registration Statement or any amendment thereto (whether pre-effective or post-effective), and prior to the filing of any prospectus or prospectus supplement related thereto, to provide the Investors with copies of all of the pages thereof (if any) that reference the Investors; and

(d) furnish to any Investor, so long as the Investor owns any Registrable Securities, forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144, (ii) a copy 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 by an Investor in availing itself of any rule or regulation of the Commission which permits an Investor to sell any such securities without registration.

Section 3.
Miscellaneous

3.1. Amendment. No amendment, alteration or modification of any of the provisions of this Agreement shall be binding unless made in writing and signed by each of the Company and the Investors.

3.2. Injunctive Relief. It is hereby agreed and acknowledged that it shall be impossible to measure in money the damages that would be suffered if the parties fail to comply with any of the obligations herein imposed on them and that in the event of any such failure, an aggrieved Person shall be irreparably damaged and shall not have an adequate remedy at law. Any such Person shall, therefore, be entitled (in addition to any other remedy to which it may be entitled in law or in equity) to injunctive relief, including, without limitation, specific performance, to enforce such obligations, and if any action should be brought in equity to enforce any of the provisions of this Agreement, none of the parties hereto shall raise the defense that there is an adequate remedy at law.

3.3. Notices. All notices required or permitted under this Agreement must be in writing and sent to the address or facsimile number identified below. Notices must be given: (a) by personal delivery, with receipt acknowledged; (b) by facsimile followed by hard copy delivered by the methods under clause (c) or (d); (c) by prepaid certified or registered mail, return receipt requested; or (d) by prepaid reputable overnight delivery service. Notices shall be effective upon receipt. Either party may change its notice address by providing the other party written notice of such change. Notices shall be delivered as follows:

If to the Investors: At such Investor's address as set forth on Schedule A hereto

If to the Company: Idera Pharmaceuticals, Inc.
505 Eagleview Blvd., Suite 212
Exton, Pennsylvania 19341
Attn: Chief Financial Officer
Attn: General Counsel

with a copy to: Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, Pennsylvania 19103-2921
Attn: Joanne R. Soslow, Esq.

3.4. Governing Law; Jurisdiction; Venue; Jury Trial.

(a) This Agreement shall be governed by, and construed in accordance with, the law of the State of New York without giving effect to any choice or conflict of law provision or rule (whether of the State of New York or any other jurisdiction) that would cause the application of the laws of any jurisdiction other than the State of New York.

(b) Each of the Company and the Investors irrevocably and unconditionally submits, for itself and its property, to the nonexclusive jurisdiction of the courts of the State of New York sitting in the Borough of Manhattan, New York and of the United States District Court of the Southern District of New York, and any appellate court from any thereof, in any action or proceeding arising out of or relating to this Agreement and the transactions contemplated herein, or for recognition or enforcement of any judgment, and each of the Company and the Investors irrevocably and unconditionally agrees that all claims in respect of any such action or proceeding may be heard and determined in such New York state court or, to the fullest extent permitted by applicable law, in such federal court. Each of the Company and the Investors hereto agrees that a final judgment in any such action or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law.

(c) Each of the Company and the Investors irrevocably and unconditionally waives, to the fullest extent permitted by applicable law, any objection that it may now or hereafter have to the laying of venue of any action or proceeding arising out of or relating to this Agreement and the transactions contemplated herein in any court referred to in Section 3.4(b) hereof. Each of the Company and the Investors hereby irrevocably waives, to the fullest extent permitted by applicable law, the defense of an inconvenient forum to the maintenance of such action or proceeding in any such court.

(d) EACH OF THE COMPANY AND THE INVESTORS HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH OF THE COMPANY AND THE INVESTORS (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT EACH OF THE COMPANY AND THE INVESTORS HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

3.5. Successors, Assigns and Transferees. Any and all rights, duties and obligations hereunder shall not be assigned, transferred, delegated or sublicensed by any party hereto without the prior written consent of the other party; provided, however, that the Investors shall be entitled to transfer Registrable Securities to one or more of their affiliates and, solely in connection therewith, may assign their rights hereunder in respect of such transferred Registrable Securities, in each case, so long as such Investor is not relieved of any liability or obligations hereunder, without the prior consent of the Company. Any transfer or assignment made other than as provided in the first sentence of this Section 3.5 shall be null and void. Subject to the foregoing and except as otherwise provided herein, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the successors, permitted assigns, heirs, executors and administrators of the parties hereto. The Company shall not consummate any recapitalization, merger, consolidation, reorganization or other similar transaction whereby stockholders of the Company receive (either directly, through an exchange, via dividend from the Company or otherwise) equity (the "Other Equity") in any other entity (the "Other Entity") with respect to Registrable Securities hereunder, unless prior to the consummation thereof, the Other Entity assumes, by written instrument, the obligations under this Agreement with respect to such Other Equity as if such Other Equity were Registrable Securities hereunder.

- 3.6. Entire Agreement. This Agreement, together with any exhibits hereto, constitute the entire agreement between the parties relating to the subject matter hereof and all previous agreements or arrangements between the parties, written or oral, relating to the subject matter hereof are superseded.
- 3.7. Waiver. No failure on the part of either party hereto to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of either party hereto in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver thereof; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.
- 3.8. Severability. If any part of this Agreement is declared invalid or unenforceable by any court of competent jurisdiction, such declaration shall not affect the remainder of the Agreement and the invalidated provision shall be revised in a manner that shall render such provision valid while preserving the parties' original intent to the maximum extent possible.
- 3.9. Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement. All references in this Agreement to sections, paragraphs and exhibits shall, unless otherwise provided, refer to sections and paragraphs hereof and exhibits attached hereto.
- 3.10. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be enforceable against the parties that execute such counterparts (including by facsimile or other electronic means), and all of which together shall constitute one instrument.
- 3.11. Term and Termination. The Investors' rights to demand the registration of the Registrable Securities under this Agreement, as well as the Company's obligations hereunder other than pursuant to Section 2.6 hereof, shall terminate automatically once all Registrable Securities cease to be Registrable Securities pursuant to the terms of of this Agreement.

[Remainder of Page Intentionally Left Blank; Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have executed this Registration Rights Agreement effective as of the day, month and year first above written.

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

IN WITNESS WHEREOF, the parties hereto have executed this Registration Rights Agreement effective as of the day, month and year first above written.

667, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to **667, L.P.**, pursuant to authority granted to it by Baker Biotech Capital, L.P., general partner to 667, L.P., and not as the general partner.

By: _____

BAKER BROTHERS LIFE SCIENCES, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to **Baker Brothers Life Sciences, L.P.**, pursuant to authority granted to it by Baker Brothers Life Sciences Capital, L.P., general partner to Baker Brothers Life Sciences, L.P., and not as the general partner.

By: _____

[Signature Page to Registration Rights Agreement]

Schedule A

The Investors

667, L.P.
BAKER BROTHERS LIFE SCIENCES, L.P.

Exhibit D

Voting Agreement

VOTING AGREEMENT

THIS VOTING AGREEMENT (this “**Agreement**”) is entered into as of December 23, 2019, by and among the investors who are signatories hereto (each, an “**Investor**” and collectively, the “**Investors**”) and Idera Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”). Capitalized terms used herein but not otherwise defined shall have the meaning given to them in the Purchase Agreement (as defined below).

BACKGROUND

The execution and delivery of this Agreement by the Investors is a material inducement to the willingness of the Company to enter into that certain Securities Purchase Agreement, dated as of the date hereof (the “**Purchase Agreement**”), by and among the Company and the Investors, pursuant to which, subject to the terms and conditions set forth in the Purchase Agreement, the Investors may purchase Securities.

In consideration of the promises and the covenants and agreements set forth in the Purchase Agreement and in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. Shares Subject to this Agreement. The Investors each agree to hold all shares of voting capital stock of the Company registered in their respective names or beneficially owned by them and/or over which they exercise voting control as of the date of this Agreement and any other shares of voting capital stock of the Company legally or beneficially held or acquired by them after the date hereof or over which they exercise voting control (the “**Shares**”) subject to, and to vote the Shares in accordance with, the provisions of this Agreement.

2. Agreement to Vote Shares.

(a) In any annual, special or adjourned meeting of the stockholders of the Company at which the matter covered by the Required Shareholder Approval are presented to the Company’s stockholders for approval, each Investor agrees that it will vote, by proxy or otherwise, its Shares (i) in favor of such matter and any matter that would reasonably be expected to facilitate such Required Shareholder Approval, and (ii) against approval of any proposal made in opposition to such matters. Each Investor shall retain at all times the right to vote its Shares in its sole discretion and without any other limitation on those matters other than those set forth in clauses (i) and (ii) of this Section 2(a) that are at any time or from time to time presented for consideration to the Company’s stockholders generally.

(b) In the event that a meeting of the stockholders of the Company is held, each Investor shall, or shall cause the holder of record on any applicable record date to, appear at such meeting or otherwise cause such Investor’s Shares to be counted as present thereat for purposes of establishing a quorum.

3. Representations, Warranties and Other Covenants of Investor. Each Investor, as to itself and not with respect to any other Investor, hereby represents, warrants and covenants to the Company as follows:

(a) Such Investor has all requisite power, legal capacity and authority to enter into this Agreement. This Agreement has been duly executed and delivered by Investor and, assuming the due authorization, execution and delivery of this Agreement by the Company, constitutes a valid and binding obligation of Investor, enforceable against Investor in accordance with its terms, except as limited by (a) applicable bankruptcy, insolvency, reorganization, moratorium, and other laws of general application affecting enforcement of creditors' rights generally, and (b) laws relating to the availability of specific performance, injunctive relief or other equitable remedies.

(b) The execution, delivery and performance of this Agreement by such Investor will not (i) conflict with, require a consent, waiver or approval under, or result in a breach of or default under, any of the terms of any agreement to which Investor is a party or by which any of such Investor's assets are bound or (ii) violate any order, writ, injunction, decree, judgment or any applicable law applicable to such Investor or any of its assets, except for any such conflict, violation or any failure to obtain such consent, waiver or approval that would not result in such Investor being able to perform its obligations under this Agreement.

(c) Such Investor shall not, directly or indirectly, take any action that would make any representation or warranty contained herein untrue or incorrect in any material respects or in any way have the effect of restricting, limiting, interfering with, preventing or disabling such Investor from performing his, her or its obligations in any material respects under this Agreement.

4. No Ownership Interest. Nothing contained in this Agreement shall be deemed to vest in the Company any direct or indirect ownership or incidence of ownership of or with respect to any Shares.

5. Miscellaneous.

(a) *Notices.* All notices, requests, and other communications hereunder shall be in writing and will be deemed to have been duly given and received (a) when personally delivered, (b) when sent by facsimile or email upon confirmation of receipt, (c) one business day after the day on which the same has been delivered prepaid to a nationally recognized courier service, or (d) five business days after the deposit in the United States mail, registered or certified, return receipt requested, postage prepaid, in each case addressed, as to the Company, to:

Idera Pharmaceuticals, Inc.
505 Eagleview Blvd., Suite 212
Exton, Pennsylvania 19341
Attn: General Counsel

with copy to:
Morgan, Lewis & Bockius LLP
1701 Market Street
Philadelphia, Pennsylvania 19103-2921
Attn: Joanne R. Soslow, Esq.
Morgan, Lewis & Bockius LLP

and as to any Investor, at the address set forth below such Investor's signature on the signature pages of this Agreement. Any party hereto from time to time may change its address, facsimile number, or other information for the purpose of notices to that party by giving notice specifying such change to the other parties hereto. Each Investor and the Company may each agree in writing to accept notices and other communications to it hereunder by electronic communications pursuant to procedures reasonably approved by it; provided that approval of such procedures may be limited to particular notices or communications.

(b) *Amendments; Waiver.* This Agreement may be amended by the parties hereto, and the terms and conditions hereof may be waived, only by an instrument in writing and signed by the Company and the Investors. The failure of any party hereto to exercise any right, power or remedy provided under this Agreement or otherwise available in respect of this Agreement at law or in equity, or to insist upon compliance by any other party with its obligation under this Agreement, and any custom or practice of the parties at variance with the terms of this Agreement, shall not constitute a waiver by such party of such party's right to exercise any such or other right, power or remedy or to demand such compliance.

(c) *Rules of Construction.* The parties hereto hereby waive the application of any law, regulation, holding or rule of construction providing that ambiguities in an agreement or other document will be construed against the party drafting such agreement or document.

(d) *Counterparts.* This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same instrument and shall become effective when one or more counterparts have been signed by each of the parties and delivered to the other parties hereto; it being understood that all parties need not sign the same counterpart.

(e) *Specific Performance; Injunctive Relief.* The parties hereto agree that the Company will be irreparably harmed and that there will be no adequate remedy at law for a violation of any of the covenants or agreements of any Investor set forth herein. Therefore, it is agreed that, in addition to any other remedies that may be available to the Company upon any such violation of this Agreement, the Company and the Investors shall have the right to enforce such covenants and agreements by specific performance, injunctive relief or by any other means available to the Company or the Investors at law or in equity and each Investor hereby waives any and all defenses which could exist in its favor in connection with such enforcement and waives any requirement for the security or posting of any bond in connection with such enforcement.

(f) *Additional Documents.* Investor shall execute and deliver any additional documents necessary or desirable in the reasonable opinion of the Company to carry out the purpose and intent of this Agreement.

(g) *Severability.* In the event that any provision of this Agreement, or the application thereof, becomes or is declared by a court of competent jurisdiction to be illegal, void or unenforceable, the remainder of this Agreement shall continue in full force and effect and the application of such provision to other persons or circumstances shall be interpreted so as reasonably to effect the intent of the parties hereto. The parties hereto further agree to use their commercially reasonable efforts to replace such void or unenforceable provision of this Agreement with a valid and enforceable provision that shall achieve, to the extent possible, the economic, business and other purposes of such void or unenforceable provision.

(h) *Governing Law; Consent to Jurisdiction.* This Agreement, and the provisions, rights, obligations, and conditions set forth herein, and the legal relations between the parties hereto, including all disputes and claims, whether arising in contract, tort, or under statute, shall be governed by and construed in accordance with the laws of the State of New York without giving effect to its conflict of law provisions.

(i) *Expenses.* All costs and expenses incurred in connection with this Agreement and the transactions contemplated hereby shall be paid by the party incurring the expenses.

(j) *Termination.* This Agreement shall terminate and shall have no further force or effect from and after the earlier to occur of (i) date upon which the Company receives the Required Shareholder Approval, (ii) the termination of the Purchase Agreement in accordance with its terms and (iii) December 31, 2020, and thereafter there shall be no liability or obligation on the part of the Investors, provided, that no such termination shall relieve any party from liability for any willful or intentional breach of this Agreement prior to such termination.

(k) **WAIVER OF JURY TRIAL. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED ON CONTRACT, TORT, OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE ACTIONS OF ANY PARTY HERETO IN NEGOTIATION, ADMINISTRATION, PERFORMANCE OR ENFORCEMENT HEREOF.**

IN WITNESS WHEREOF, the parties hereto have caused this **VOTING AGREEMENT** to be executed as of the date first written above.

IDERA PHARMACEUTICALS, INC.

By: _____
Name:
Title:

IN WITNESS WHEREOF, the parties hereto have caused this VOTING AGREEMENT to be executed as of the date first written above.

667, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to **667, L.P.**, pursuant to authority granted to it by Baker Biotech Capital, L.P., general partner to 667, L.P., and not as the general partner.

By: _____

BAKER BROTHERS LIFE SCIENCES, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to **Baker Brothers Life Sciences, L.P.**, pursuant to authority granted to it by Baker Brothers Life Sciences Capital, L.P., general partner to Baker Brothers Life Sciences, L.P., and not as the general partner.

By: _____



IDERA PHARMACEUTICALS Contact:

Robert A. Doody, Jr.
SVP, Investor Relations & Communications
Phone (484) 348-1677
RDOODY@IDERAPHARMA.COM

Idera Pharmaceuticals Announces Private Placement Up To \$97.7 Million

Exton, PA, December 23, 2019 — Idera Pharmaceuticals, Inc. (Nasdaq: IDRA), or the Company, announced today entering into an agreement with funds affiliated with an institutional investor providing for a private placement exempt from the registration requirements of the Securities Act of 1933, as amended, pursuant to which Idera has sold shares of Series B1 convertible preferred stock and warrants to purchase common stock for aggregate gross proceeds of \$3.9 million. In connection with the agreement for the private placement, the investors in the private placement will pay Idera an upfront option fee of approximately \$6.2 million. Under the agreement, Idera also agreed to sell to the investors, at their option and subject to certain conditions including stockholder approval to increase Idera's authorized shares of common stock, shares of Series B2, Series B3 and Series B4 convertible preferred stock and warrants to purchase common stock for aggregate gross proceeds of up to an additional \$87.6 million over a 21 month period after stockholder approval is received. The Company has the right to decline the Series B4 investment if its common stock trades at \$7.60 for 20 days out of 30 days subsequent to the closing of the Series B3 investment.

The transaction was priced at-the-market under the Nasdaq rules. The Series B1 convertible preferred stock and associated warrant had a combined purchase price on an as converted basis of \$1.645. The warrants to purchase common stock have an exercise price of \$1.52 per share and an exercise period commencing on issuance and a term of seven years.

The Company plans to use the proceeds from the financing primarily to fund the completion, of the ongoing ILLUMINATE-301 clinical trial of its lead product, tilsotolimod, for the treatment of anti-PD-1 refractory metastatic melanoma. The Company also plans to use the subsequent proceeds, if exercised, to fund the potential NDA filing and commercial launch of tilsotolimod along with the ongoing ILLUMINATE-206 trial, and for general corporate purposes.

The shares of convertible preferred stock and warrants sold in the private placement have not been registered under the Securities Act of 1933, as amended, or under any state securities laws and, unless so registered, may not be offered or sold in the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and applicable state securities laws. Idera has granted the purchasers resale registration rights for purposes of registering the resale of the shares of common stock issuable upon conversion of the preferred shares and warrants issued in the private placement.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation, or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

About Tilsotolimod (IMO-2125)

Tilsotolimod is a TLR 9 agonist that received Fast Track Designation from the U.S. Food and Drug Administration (FDA) in 2017 for the treatment of anti-PD-1 refractory melanoma, in combination with ipilimumab as well as orphan drug designation from the FDA for the treatment of melanoma Stages IIb to IV. It signals the immune system to create and activate cancer-fighting cells (T-cells) to target solid tumors. Currently approved immuno-oncology treatments, specifically check-point inhibitors, provide benefit for some patients, but these therapies are limited in patients whose immune responses are missing or weak. Intratumoral injections with tilsotolimod are designed to selectively enable the tumor-specific T-cells to recognize and attack cancers that remained elusive and unrecognized by the immune system exposed to checkpoint inhibitors alone, while limiting toxicity or impact on healthy cells in the body.

About Idera Pharmaceuticals

Harnessing the approach of the earliest researchers in immunotherapy and the company's vast experience in developing proprietary immunomodulatory platforms, Idera's TLR agonist development program is focused on priming the immune system to play a more powerful role in fighting cancer, ultimately increasing the number of people who can benefit from immunotherapy. Idera also continues to focus on the acquisition, development and ultimate commercialization of drug candidates for both oncology and rare disease indications characterized by small, well-defined patient populations with serious unmet needs. To learn more about Idera, visit www.iderapharma.com.

Idera Forward Looking Statements

This press release contains forward-looking statements within the meaning of the safe harbor of the Private Securities Litigation Reform Act of 1995 and the Federal securities laws. All statements, other than statements of historical fact, included or incorporated in this press release, including statements regarding the Company's intended ability to close on the Series B2, Series B3, Series B4 preferred stock investments and the intended use of proceeds are forward-looking statements. The words "believes," "anticipates," "estimates," "plans," "expects," "intends," "may," "could," "should," "potential," "likely," "projects," "continue," "will," and "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Idera cannot guarantee that it will actually achieve the plans, intentions or expectations disclosed in its forward-looking statements and you should not place undue reliance on the Company's forward-looking statements. There are a number of important factors that could cause Idera's actual results to differ materially from those indicated or implied by its forward-looking statements. Factors that may cause such a difference include: whether the Company receives stockholder approval to increase its authorized shares of common stock and whether the Company's cash resources will be sufficient to fund the Company's continuing operations and the further development of the Company's programs for the period anticipated; whether interim results from a clinical trial, such as the preliminary results reported in this release, will be predictive of the final results of the trial; whether results obtained in preclinical studies and clinical trials such as the results described in this release will be indicative of the results that will be generated in future clinical trials, including in clinical trials in different disease indications; whether products based on Idera's technology will advance into or through the clinical trial process when anticipated or at all or warrant submission for regulatory approval; whether such products will receive approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies; whether, if the Company's products receive approval, they will be successfully distributed and marketed; whether the Company's collaborations will be successful; and such other important factors as are set forth under the caption "Risk factors" in the Company's filings with the Securities and Exchange Commission. While Idera may elect to do so at some point in the future, the Company does not assume any obligation to update any forward-looking statements and it disclaims any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.
