

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

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

**IDERA PHARMACEUTICALS, INC.**  
(Exact name of Registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of incorporation or organization)

**04-3072298**  
(I.R.S. Employer Identification Number)

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

**19341**  
(Zip Code)

**ACERAGEN, INC. 2021 STOCK INCENTIVE PLAN**  
(Full title of the plan)

**John Taylor**  
**Chief Executive Officer**  
**505 Eagleview Blvd., Suite 212**  
**Exton, Pennsylvania 19341**  
(Name and address of agent for service)

**(484) 348-1600**  
(Telephone number, including area code, of agent for service)

**Copy to:**  
Celia A. Soehner, Esq.  
Alexandra M. Good, Esq.  
Morgan, Lewis & Bockius LLP  
One Oxford Centre, 32nd Floor,  
Pittsburgh, PA 15219  
(412) 560-3300

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

## EXPLANATORY NOTE

Pursuant to the Agreement and Plan of Merger, dated September 28, 2022 (the “Merger Agreement”), by and among Idera Pharmaceuticals, Inc. (the “Company”), Bell Merger Sub I, Inc., a Delaware corporation and a wholly owned subsidiary of the Company (“First Merger Sub”), Bell Merger Sub II, LLC, a Delaware limited liability company and wholly owned subsidiary of the Company (“Second Merger Sub”), and Aceragen, Inc. (“Aceragen”), the Company acquired Aceragen through a reorganization, in which, as steps in a single integrated transaction (the “Merger”), (i) First Merger Sub merged with and into Aceragen and Aceragen became a direct, wholly owned subsidiary of the Company and (ii) thereafter, as part of the same overall transaction, Aceragen merged with and into Second Merger Sub, with Aceragen ceasing to exist and Second Merger Sub surviving as a direct, wholly-owned subsidiary of the Company.

In accordance with the Merger Agreement, the Company assumed and became the sponsor of the Aceragen, Inc. 2021 Stock Incentive Plan, as amended (the “Plan”), and each option to purchase shares of Aceragen’s common stock that was outstanding and unexercised immediately prior to the effective time of the Merger under the Plan, whether or not vested, was assumed and converted into and became an option to purchase shares of the Company’s common stock par value \$0.001 per share (“Common Stock”) (as adjusted by the exchange ratio pursuant to the Merger Agreement).

The Company is filing this Registration Statement on Form S-8 (this “Registration Statement”) to register 1,668,476 shares that have been reserved for issuance upon exercise of the options assumed and converted pursuant to the Merger that were previously granted and are currently outstanding under the Plan.

**PART I**

**INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS**

The documents containing the information required by Part I of this Registration Statement will be delivered to Plan participants as specified by Rule 428(b)(1) of the Securities Act of 1933, as amended (the "Securities Act"). Such documents are not required to be, and are not, filed with the Securities and Exchange Commission (the "Commission"), either as part of this Registration Statement or as prospectuses or prospectus supplements to this Registration Statement pursuant to Rule 424 under the Securities Act. These documents and the documents incorporated by reference into this Registration Statement pursuant to Item 3 of Part II of this Registration Statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 3. Incorporation of Documents by Reference

The following documents previously filed by the Company with the Commission are incorporated by reference into this Registration Statement:

- (a) The Company's Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2021, filed with the Commission on [March 31, 2022](#);
- (b) The Company's Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2022, June 30, 2022, and September 30, 2022 filed with the Commission on [May 5, 2022](#), [August 9, 2022](#), and [November 14, 2022](#), respectively.
- (c) The Company's Current Reports on Form 8-K, filed with the Commission on [May 27, 2022](#), [June 24, 2022](#), [September 30, 2022](#) (as amended by the Current Report on Form 8-K/A filed on [December 9, 2022](#)), [November 17, 2022](#), and [November 23, 2022](#), respectively.
- (d) The description of the Common Stock contained in its Registration Statements on Form 8-A filed with the Commission on [December 4, 2003](#), as amended on [August 17, 2007](#) and [December 7, 2007](#).

To the extent that any information contained in any Current Report on Form 8-K, or any exhibit thereto, was furnished to, rather than filed with, the Commission, such information or exhibit is specifically not incorporated by reference.

All reports and other documents that the Company subsequently files with the Commission pursuant to Sections 13(a), 13(c), 14, or 15(d) of the Securities Exchange Act of 1934, as amended (the "[Exchange Act](#)"), after the date of this Registration Statement and prior to the filing of a post-effective amendment that indicates that the Company has sold all of the securities offered under this Registration Statement or deregisters the distribution of all such securities then remaining unsold shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date that the Company files such report or document.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document that also is, or is deemed to be, incorporated by reference herein modifies or replaces such statement. Any such statement so modified or replaced shall not be deemed, except as so modified or replaced, to constitute a part of this Registration Statement.

#### Item 4. Description of Securities

Not applicable.

#### Item 5. Interests of Named Experts and Counsel

Not applicable.

#### Item 6. Indemnification of Directors and Officers

*Restated Certificate of Incorporation*

Article EIGHTH of the Company's Restated Certificate of Incorporation provides that no director of the Company shall be personally liable for any monetary damages for any breach of fiduciary duty as a director, except to the extent that the Delaware General Corporation Law (the "[DGCL](#)") prohibits the elimination or limitation of liability of directors for breach of fiduciary duty.

Article NINTH of the Company's Restated Certificate of Incorporation provides that a director or officer of the Company (a) shall be indemnified by the Company against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement incurred in connection with any litigation or other legal proceeding (other than an action by or in the right of the Company) brought against him by virtue of his position as a director or officer of the Company if he acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interests of the Company, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful and (b) shall be indemnified by the Company against all expenses (including attorneys' fees) and amounts paid in settlement incurred in connection with any action by or in the right of the Company brought against him by virtue of his position as a director or officer of the Company if he acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interests of the Company, except that no indemnification shall be made with respect to any matter as to which such person shall have been adjudged to be liable to the Company, unless a court determines that, despite such adjudication but in view of all of the circumstances, he is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that a director or officer has been successful, on the merits or otherwise, including, without limitation, the dismissal of an action without prejudice, he is required to be indemnified by the Company against all expenses (including attorneys' fees) incurred in connection therewith. Expenses shall be advanced to a director or officer at his request, provided that he undertakes to repay the amount advanced if it is ultimately determined that he is not entitled to indemnification for such expenses.

Indemnification is required to be made unless the Company determines that the applicable standard of conduct required for indemnification has not been met. In the event of a determination by the Company that the director or officer did not meet the applicable standard of conduct required for indemnification, or if the Company fails to make an indemnification payment within 60 days after such payment is claimed by such person, such person is permitted to petition the court to make an independent determination as to whether such person is entitled to indemnification. As a condition precedent to the right of indemnification, the director or officer must give the Company written notice of the action for which indemnity is sought and the Company has the right to participate in such action or assume the defense thereof.

Article NINTH of the Company's Restated Certificate of Incorporation further provides that the indemnification provided therein is not exclusive and provides that in the event that the Delaware General Corporation Law is amended to expand the indemnification permitted to directors or officers the Company must indemnify those persons to the full extent permitted by such law as so amended.

*General Corporation Law of the State of Delaware*

Under Section 145 of the DGCL, the Company is empowered to indemnify its directors and officers in the circumstances therein provided. Certain portions of Section 145 are summarized below:

Section 145(a) of the DGCL provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation and in criminal actions where such person had no reasonable cause to believe such person's conduct was unlawful.

Section 145(b) of the DGCL provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made in respect of any claim, issue or matter in which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Delaware Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Delaware Court of Chancery or such other court shall deem proper.

Under Section 145(c) of the DGCL, indemnification against expenses (including attorneys' fees) actually and reasonably incurred by directors, officers, employees and agents is required in those cases where the person to be indemnified has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in Section 145(a) and (b), or in defense of any claim, issue or matter therein.

Section 145(d) of the DGCL provides that any indemnification under Section 145(a) and (b) (unless ordered by a court) shall be made by the corporation only as authorized in the specific case upon a determination that indemnification of the present or former director, officer, employee or agent is proper in the circumstances because such person has met the applicable standard of conduct set forth in Section 145(a) and (b). Such determination shall be made, with respect to a person who is a director or officer at the time of such determination, (1) by a majority vote of the directors who were not parties to such action, suit or proceeding, even though less than a quorum, or (2) by a committee of such directors designated by majority vote of such directors, even though less than a quorum, or (3) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion, or (4) by the stockholders.

Section 145(e) of the DGCL provides that expenses (including attorneys' fees) incurred by an officer or director in defending any civil, criminal, administrative or investigative action, suit or proceeding may be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the corporation as authorized in Section 145. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents may be so paid upon such terms and conditions, if any, as the corporation deems appropriate.

Section 145(f) of the DGCL provides that the indemnification and advancement of expenses provided by, or granted pursuant to, Section 145 shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office.

Under Section 145(g) of the DGCL, a corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee, or agent of the corporation, or who, while serving in such capacity, is or was at the request of the corporation, a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against liability asserted against or incurred by such person in any such capacity or arising out of such person's status as such, whether or not the corporation would have the power to provide indemnity under Section 145. The Company has obtained insurance which, subject to certain exceptions, insures the directors and officers of the Company and its subsidiaries.

#### *Indemnification Agreements and D&O Insurance*

The Company has entered into indemnification agreements with its directors and officers. In general, these agreements provide that the Company will indemnify the director or officer to the fullest extent permitted by law for claims arising in his or her capacity as a director or officer of the Company or in connection with their service at the Company's request for another corporation or entity. The indemnification agreements also provide for procedures that will apply in the event that a director or officer makes a claim for indemnification and establish certain presumptions that are favorable to the director or officer. Additionally, the Company has obtained directors and officers insurance for the benefit of its directors and its officers.

The above discussion of the Company's Restated Certificate of Incorporation, Indemnification Agreements, and of Section 145 of the DGCL is not intended to be exhaustive and is respectively qualified in its entirety by such Restated Certificate of Incorporation, Indemnification Agreements, and applicable statutes.

**Item 7. Exemption from Registration Claimed**

Not applicable.

**Item 8. Exhibits**

A list of exhibits filed herewith is contained in the Exhibit Index that immediately precedes such exhibits and is incorporated herein by reference.

**Item 9. Undertakings**

(a) The undersigned registrant hereby undertakes:

1. To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*Provided, however,* that paragraphs (a)(i) and (a)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement.

2. That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

3. To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

**EXHIBIT INDEX**

<b>Exhibit No.</b>	<b>Exhibit Description</b>
<a href="#"><u>4.1</u></a>	<a href="#"><u>Restated Certificate of Incorporation of Idera Pharmaceuticals, Inc. (incorporated by reference to Exhibit 3.1 to the Quarterly Report on Form 10-Q filed on August 2, 2018).</u></a>
<a href="#"><u>4.2</u></a>	<a href="#"><u>Certificate of Amendment to the Restated Certificate of Incorporation of Idera Pharmaceuticals, Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed on May 18, 2020).</u></a>
<a href="#"><u>4.3</u></a>	<a href="#"><u>Second Amended and Restated Bylaws of Idera Pharmaceuticals, Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed on November 17, 2022).</u></a>
<a href="#"><u>5.1*</u></a>	<a href="#"><u>Opinion of Morgan, Lewis &amp; Bockius LLP.</u></a>
<a href="#"><u>23.1*</u></a>	<a href="#"><u>Consent of Morgan, Lewis &amp; Bockius LLP (included in Exhibit 5.1 hereto)</u></a>
<a href="#"><u>23.2*</u></a>	<a href="#"><u>Consent of Ernst &amp; Young LLP, independent registered public accounting firm for the Registrant.</u></a>
<a href="#"><u>23.3*</u></a>	<a href="#"><u>Consent of FORVIS, LLP (Formerly, Dixon Hughes Goodman LLP), the independent auditors of Aceragen, Inc.</u></a>
<a href="#"><u>24.1*</u></a>	<a href="#"><u>Power of Attorney (included on the signature page of this Registration Statement).</u></a>
<a href="#"><u>99.1</u></a>	<a href="#"><u>Aceragen, Inc. 2021 Stock Incentive Plan (incorporated by reference to Exhibit 10.14 to the Quarterly Report on Form 10-Q filed on November 14, 2022).</u></a>
<a href="#"><u>99.2*</u></a>	<a href="#"><u>Amendment to Aceragen, Inc. 2021 Stock Incentive Plan.</u></a>
<a href="#"><u>107*</u></a>	<a href="#"><u>Filing Fee Table.</u></a>
* Filed herewith	





December 22, 2022

Idera Pharmaceuticals, Inc.  
505 Eagleview Blvd., Suite 212  
Exton, Pennsylvania 19341

Re: Idera Pharmaceuticals, Inc. Registration Statement on Form S-8 Filed on December 22, 2022

Ladies and Gentlemen:

We have acted as counsel to Idera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with its filing of a Registration Statement on Form S-8 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Act"), with the Securities and Exchange Commission (the "SEC") on the date hereof. The Registration Statement relates to the registration of the offer and sale of 1,668,476 shares of common stock, \$0.001 par value, of the Company (the "Common Stock"), which are reserved for issuance under the Aceragen, Inc. 2021 Stock Incentive Plan, as amended (the "Plan").

In connection with this opinion letter, we have examined the Registration Statement and originals, or copies certified or otherwise identified to our satisfaction, of (i) the Restated Certificate of Incorporation of the Company, as amended to date, (ii) the Second Amended and Restated Bylaws of the Company, as amended to date, (iii) certain resolutions of the Company's Board of Directors relating to the Registration Statement, (iv) the Plan, and (v) such other documents, records, and other instruments as we have deemed appropriate for purposes of the opinions set forth herein.

We have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of the documents submitted to us as originals, the conformity with the originals of all documents submitted to us as certified, facsimile or photostatic copies, and the authenticity of the originals of all documents submitted to us as copies. With respect to matters of fact relevant to our opinions as set forth below, we have relied upon certificates of officers of the Company, representations made by the Company in documents examined by us, and representations of officers of the Company. We have also obtained and relied upon such certificates and assurances from public officials as we have deemed necessary for the purposes of our opinions set forth below.

Subject to the foregoing and the other matters set forth herein, we are of the opinion, as of the date hereof that the Common Stock has been duly authorized by the Company and, when issued by the Company in accordance with the provisions of the Plan, will be validly issued, fully paid, and non-assessable.

We hereby consent to the use of this opinion as Exhibit 5.1 to the Registration Statement. In giving such consent, we do not hereby admit that we are acting within the category of persons whose consent is required under Section 7 of the Act or the rules or regulations of the SEC thereunder.

The opinions expressed herein are limited to the Federal laws of the United States and the Delaware General Corporation Law, as amended.

Very truly yours,

/s/ Morgan, Lewis & Bockius LLP

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Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the Aceragen, Inc. 2021 Stock Incentive Plan, as amended, of Idera Pharmaceuticals, Inc. of our report dated March 31, 2022, with respect to the financial statements of Idera Pharmaceuticals, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2021, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Philadelphia, Pennsylvania  
December 22, 2022

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**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statement (Form S-8 No. 333-152669) pertaining to the 2008 Stock Incentive Plan of Idera Pharmaceuticals, Inc.
  - (2) Registration Statement (Form S-8 No. 333-176067) pertaining to the 2008 Stock Incentive Plan and 1995 Employee Stock Purchase Plan of Idera Pharmaceuticals, Inc.
  - (3) Registration Statement (Form S-8 No. 333-191076) pertaining to the 2013 Stock Incentive Plan of Idera Pharmaceuticals, Inc.
  - (4) Registration Statement (Form S-8 No. 333-197062) pertaining to the 2013 Stock Incentive Plan of Idera Pharmaceuticals, Inc.
  - (5) Registration Statement (Form S-8 No. 333-202691) pertaining to Inducement Stock Option Awards of Idera Pharmaceuticals, Inc.
  - (6) Registration Statement (Form S-8 No. 333-206129) pertaining to the 2013 Stock Incentive Plan, as amended, of Idera Pharmaceuticals, Inc.
  - (7) Registration Statement (Form S-8 No. 333-210090) pertaining to an Inducement Stock Option Award of Idera Pharmaceuticals, Inc.
  - (8) Registration Statement (Form S-1 as amended by Form S-3/A No. 333-136610) of Idera Pharmaceuticals, Inc.
  - (9) Registration Statement (Form S-1 as amended by Form S-3/A No. 333-187155) of Idera Pharmaceuticals, Inc.
  - (10) Registration Statement (Form S-2 as amended by Form S-3/A No. 333-109630) of Idera Pharmaceuticals, Inc.
  - (11) Registration Statement (Form S-3 No. 333-119943) of Idera Pharmaceuticals, Inc.
  - (12) Registration Statement (Form S-3 No. 333-126634) of Idera Pharmaceuticals, Inc.
  - (13) Registration Statement (Form S-3 No. 333-131804) of Idera Pharmaceuticals, Inc.
  - (14) Registration Statement (Form S-3 No. 333-133455) of Idera Pharmaceuticals, Inc.
  - (15) Registration Statement (Form S-3 No. 333-133456) of Idera Pharmaceuticals, Inc.
  - (16) Registration Statement (Form S-3 No. 333-139830) of Idera Pharmaceuticals, Inc.
  - (17) Registration Statement (Form S-3 as amended by Form S-3/A No. 333-185392) of Idera Pharmaceuticals, Inc.
  - (18) Registration Statement (Form S-3 No. 333-186312) of Idera Pharmaceuticals, Inc.
  - (19) Registration Statement (Form S-3 No. 333-189700) of Idera Pharmaceuticals, Inc.
  - (20) Registration Statement (Form S-3 No. 333-210140) of Idera Pharmaceuticals, Inc.
  - (21) Registration Statement (Form S-8 No. 333-217665) pertaining to an Inducement Stock Option Award of Idera Pharmaceuticals, Inc.
  - (22) Registration Statement (Form S-8 No. 333-219740) pertaining to the 2017 Employee Stock Purchase Plan of Idera Pharmaceuticals, Inc.
  - (23) Registration Statement (Form S-8 No. 333-219741) pertaining to the 2013 Stock Incentive Plan, as amended, of Idera Pharmaceuticals, Inc.
  - (24) Registration Statement (Form S-8 No. 333-232609) pertaining to the 2017 Employee Stock Purchase Plan of Idera Pharmaceuticals, Inc.
  - (25) Registration Statement (Form S-8 No. 333-232610) pertaining to the 2013 Stock Incentive Plan, as amended, of Idera Pharmaceuticals, Inc.
  - (26) Registration Statement (Form S-3 No. 333-238868) of Idera Pharmaceuticals, Inc.
  - (27) Registration Statement (Form S-3 No. 333-240361) of Idera Pharmaceuticals, Inc.
  - (28) Registration Statement (Form S-3 No. 333-240366) of Idera Pharmaceuticals, Inc.
  - (29) Registration Statement (Form S-3 No. 333-248560) of Idera Pharmaceuticals, Inc.
  - (30) Registration Statement (Form S-3 and S-3/A No. 333-253804) of Idera Pharmaceuticals, Inc.
  - (31) Registration Statement (Form S-8 No. 333-266038) pertaining to the 2013 Stock Incentive Plan, as amended, of Idera Pharmaceuticals, Inc.
  - (32) Registration Statement (Form S-8 No. 333-266039) pertaining to the 2017 Employee Stock Purchase Plan of Idera Pharmaceuticals, Inc.
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of our report dated April 15, 2022 (except for Notes 2 and 6 related to Series X Preferred Stock and Note 14 which are dated as of November 18, 2022), with respect to the consolidated financial statements as of December 31, 2021 and for the period from March 2, 2021 (inception) to December 31, 2021 of Aceragen, Inc., incorporated by reference in this Form S-8 of Idera Pharmaceuticals, Inc. Our audit report for the period from March 2, 2021 (inception) to December 31, 2021 contains an explanatory paragraph describing conditions that raise substantial doubt about Aceragen, Inc.'s ability to continue as a going concern as described in Note 2 to the consolidated financial statements.

/s/ FORVIS, LLP  
(Formerly, Dixon Hughes Goodman LLP)

Raleigh, North Carolina  
December 22, 2022

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**AMENDMENT TO THE  
ACERAGEN, INC.  
2021 STOCK INCENTIVE PLAN**

This Amendment (this “**Amendment**”) to the Aceragen, Inc. 2021 Stock Incentive Plan (the “**Plan**”), is effective as the Effective Date (as defined below).

**W I T N E S S E T H:**

**WHEREAS**, Aceragen, Inc. (“**Aceragen**”) maintains the Plan;

**WHEREAS**, under Section 9(d) of the Plan, the Board of Directors of Aceragen (the “**Board**”) may amend, suspend or terminate the Plan or any portion thereof at any time, subject to the limitations set forth in the Plan

**WHEREAS**, pursuant to that certain Agreement and Plan of Merger (the “**Merger Agreement**”) entered into as of September 28, 2022, by and among Idera Pharmaceuticals, Inc., a Delaware corporation (“**Idera**”), Bell Merger Sub I, Inc., a Delaware corporation and wholly owned subsidiary of Parent (“**First Merger Sub**”), Bell Merger Sub II, LLC, a Delaware limited liability company and wholly owned subsidiary of Idera (“**Second Merger Sub**”) and, together with First Merger Sub, “**Merger Subs**”), and Aceragen, as a result of the Merger (as defined in the Merger Agreement), Aceragen shall merge with and into Second Merger Sub and the surviving entity shall be a wholly owned subsidiary of Idera.

**WHEREAS**, pursuant to and subject to the terms of the Merger Agreement, as a result of the Merger, the shares of the common stock of Aceragen shall be converted at the First Effective Time (as defined in the Merger Agreement) into the right to receive a number of shares of Parent Stock Payment Shares (as defined in the Merger Agreement) determined on the basis of the Exchange Ratio (as defined in the Merger Agreement), as further set forth in Sections 1.5 and 1.6 of the Merger Agreement;

**WHEREAS**, pursuant to and subject to the terms of the Merger Agreement, as a result of the Merger, each Company Option held by a Continuing Employee (as such terms are defined in the Merger Agreement) that is outstanding and unexercised immediately prior to the First Effective Time, whether or not vested, shall cease to represent a right to acquire shares of the common stock of Aceragen and shall be assumed and converted, at the First Effective Time, into an option to purchase a number of shares of Parent Stock Payment Shares determined on the basis of the Exchange Ratio, as further set forth in Section 1.10 of the Merger Agreement (the “**Option Conversion**”, and such Company Options, the “**Converted Options**”);

**WHEREAS**, effective upon the First Effective Time (the “**Effective Date**”), Aceragen desires to amend certain terms of the Plan as set forth in this Amendment.

**WHEREAS**, the Board has determined that this Amendment does not materially and adversely affect the rights of Participants under the Plan, and therefore, this Amendment shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the Effective Time.

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**NOW, THEREFORE**, conditioned upon the Closing of the Merger (as each term is defined in the Merger Agreement) and effective as of the Effective Date, the Plan is hereby amended as follows:

1. Simultaneously with the Option Conversion, the Plan shall be assumed by Idera, and all obligations of Aceragen under the Plan shall be obligations of Idera. For all purposes under the Plan and any Award granted under the Plan at any time, references to the “**Company**” shall mean Idera, and, except where the context otherwise requires, the term “**Company**” shall include any of Idera’s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the “**Code**”) and any other business venture (including, without limitation, joint venture or limited liability company) in which Idera has a controlling interest, as determined by the Board. Without limiting the foregoing, (i) references to shares of “**Common Stock**” shall mean shares of common stock, \$0.001 par value per share, of Idera (adjusted, to the extent applicable, pursuant to the terms of the Merger Agreement); *provided* that unless and until the Preferred Stock Conversion Proposal (as defined in the Merger Agreement) is approved, “**Common Stock**” shall alternatively mean shares of Parent Convertible Preferred Stock (as defined in the Merger Agreement), to the extent applicable in respect of Converted Options, and (ii) references to the “**Board of Directors of the Company**” shall mean the Board of Directors of Idera.

2. Section 2 of the Plan is amended to read as follows:

2. Eligibility

All of the Company’s employees, officers and directors, as well as consultants and advisors to the Company (as such terms are defined and interpreted for purposes of Form S-8 under the Securities Act of 1933, as amended (the “**Securities Act**”), or any successor form) are eligible to be granted Awards under the Plan. Each person who is granted an Award under the Plan is deemed a “**Participant**.” “**Award**” means Options (as defined in Section 5), Restricted Stock (as defined in Section 6), Restricted Stock Units (as defined in Section 6) and Other Stock-Based Awards (as defined in Section 7).

3. Section 3 of the Plan to add the following new Section 3(c) to the end thereof:

(c) Discretionary Awards to non-employee directors may be granted and administered only by a Committee, all of the members of which are independent directors as defined by Section 5605(a)(2) of the NASDAQ Marketplace Rules.

4. Section 5 of the Plan to add the following new Sections 5(g) and 5(h) to the end thereof:

(g) Limitation on Repricing. Unless such action is approved by the Company’s stockholders, the Company may not (except as provided for under Section 8): (1) amend any outstanding Option granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option, (2) cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(b)) covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option, (3) cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current Fair Market Value, other than pursuant to Section 8, or (4) take any other action under the Plan that constitutes a “repricing” within the meaning of the rules of the NASDAQ Stock Market (“**NASDAQ**”).

(h) No Reload Options. No Option granted under the Plan shall contain any provision entitling the Participant to the automatic grant of additional Options in connection with any exercise of the original Option.

5. Section 9(f)(2) of the Plan is deleted in its entirety.

6. Section 10(d) of the Plan is amended to read as follows:

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time provided that (i) no amendment that would require stockholder approval under the rules of NASDAQ may be made effective unless and until the Company's stockholders approve such amendment; and (ii) if the NASDAQ amends its corporate governance rules so that such rules no longer require stockholder approval of NASDAQ "material amendments" to equity compensation plans, then, from and after the effective date of such amendment to the NASDAQ rules, no amendment to the Plan (A) materially increasing the number of shares authorized under the Plan (other than pursuant to Section 4(b) or 8), (B) expanding the types of Awards that may be granted under the Plan, or (C) materially expanding the class of participants eligible to participate in the Plan shall be effective unless and until the Company's stockholders approve such amendment. In addition, if at any time the approval of the Company's stockholders is required as to any other modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 10(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan.

7. Section 10(g) of the Plan is amended to read as follows:

It is intended that all Awards granted hereunder be either exempt from, or issued in compliance with, Code Section 409A.

If and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant pursuant to the Plan in connection with his or her employment termination constitutes "nonqualified deferred compensation" within the meaning of Section 409A of the Code and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, which determinations shall be binding on the Participant, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of "separation from service" (as determined under Section 409A of the Code) (the "**New Payment Date**"), except as Section 409A of the Code may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.



The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A of the Code but do not to satisfy the conditions of that section.

8. The California Supplement to the Plan is amended to add the following to the end thereof:

Notwithstanding anything in the Plan or this California Supplement to the contrary, the provisions of this California Supplement other than Section 1(c) and Section 4 of this California Supplement shall not apply at any time that securities are not offered or sold pursuant to the Plan in reliance on Section 25102(o) of the California Corporations Code, as amended. The provisions of Section 1(c) and Section 4 of this California Supplement shall not apply to Awards that do not involve the offering or sale of securities in reliance on Section 25102(o) of the California Corporations Code, as amended.

9. Except as modified by this Amendment, all the terms and provisions of the Plan shall continue in full force and effect.

*[Remainder of Page Intentionally Left Blank]*

IN WITNESS WHEREOF, the undersigned has caused this Amendment to be executed as of the date set forth below, but effective as of the Effective Date.

**ACERAGEN, INC.**

/s/ John Taylor

By

John Taylor

Print Name

Chief Executive Officer

Title

9/28/2022

Date

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## Calculation of Filing Fee Table

Form S-8  
(Form Type)Idera Pharmaceuticals, Inc.  
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Newly Registered Securities										
Security Type	Security Class Title(1)	Fee Calculation or Carry Forward Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit (2)	Proposed Maximum Aggregate Offering Price (2)	Fee Rate	Amount of Registration Fee	Carry Forward Type	Carry Forward File Number	Filing Fee Previously Paid in Carry Forward with Initial Securities to be Carried Forward
Fees to be Paid	Equity	Common Stock, \$0.001 par value	1,668,476	\$0.28	\$467,173	\$110.20 per \$1,000,000.00	\$51.48	-	-	-
Fees Previously Paid	-	-	-	-	-	-	-	-	-	-
Carry Forward Securities										
Carry Forward Securities		-		-	-	-	-	-	-	-
		Total Offering Amounts			\$467,173		\$51.48			
		Total Fees Previously Paid							-	
		Total Fee Offsets					\$0.00			
		Net Fee Due					\$51.48			

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement on Form S-8 shall also cover any additional shares of the registrant's common stock, \$0.001 par value (the "Common Stock") which become issuable under the Aceragen, Inc. 2021 Stock Incentive Plan, as amended, by reason of any stock dividend, stock split, recapitalization, or any other similar transaction effected without the receipt of consideration which results in an increase in the number of outstanding shares of Common Stock.
- (2) Estimated solely for the purpose of determining the registration fee pursuant to Rules 457(c) and 457(h) under the Securities Act, based on the average of the high and low prices of the Common Stock as reported on The Nasdaq Capital Market on December 19, 2022.