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

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**FORM 8-K**

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

**Date of Report (Date of Earliest Event Reported): November 17, 2022**

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**Idera Pharmaceuticals, Inc.**  
(Exact name of registrant as specified in its charter)

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

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

**04-1187261**  
(I.R.S. Employer  
Identification No.)

**505 Eagleview Blvd., Suite 212**  
**Exton, Pennsylvania 19341**  
(Address of principal executive offices)

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

**Not Applicable**  
(Former name or former address, if changed since last report)

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions :

- 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, \$0.001 Par Value	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 or Rule 12b-2 of the Securities Exchange Act of 1934.

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.

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### Item 3.03. Material Modification to Rights of Security Holders.

The disclosure set forth in Item 5.03 below is hereby incorporated herein by reference.

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

#### *Bylaws Amendment and Restatement*

On November 17, 2022, the Board of Directors (the “**Board**”) of Idera Pharmaceuticals, Inc. (the “**Company**”) approved the adoption of the Second Amended and Restated By-Laws of the Company (the “**New Bylaws**”), which amend and restate the Amended and Restated Bylaws of the Company, as amended by the First Amendment to the Amended and Restated Bylaws of the Company, dated January 21, 2018 (the “**Existing Bylaws**”) in their entirety. The New Bylaws amend the Existing Bylaws to, among other things, clarify provisions relating to virtual stockholder meetings and modify the quorum such that presence, in person or by proxy, of the holders of one-third of the shares of capital stock issued and outstanding and entitled to vote (rather than the majority of the aggregate number of shares of each class of capital stock issued and outstanding and entitled to vote) constitutes a quorum for the transaction of business at stockholder meetings.

The foregoing description of the New Bylaws does not purport to be complete and is qualified in its entirety by reference to the full text of the New Bylaws, which is filed as Exhibit 3.1 to this Current Report on Form 8-K and is incorporated herein by reference.

#### *Series B Preferred Stock*

On November 17, 2022, the Board declared a dividend of one one-thousandth of a share of Series B Preferred Stock, par value \$0.01 per share (“**Series B Preferred Stock**”), for each outstanding share of the Company’s common stock, par value \$0.001 per share (“**Common Stock**”) to stockholders of record at 5:00 p.m. Eastern Time on November 28, 2022 (the “**Record Date**”).

**General; Transferability.** Shares of Series B Preferred Stock will be uncertificated and represented in book-entry form. No shares of Series B Preferred Stock may be transferred by the holder thereof except in connection with a transfer by such holder of any shares of Common Stock held by such holder, in which case a number of one one-thousandths (1/1000ths) of a share of Series B Preferred Stock equal to the number of shares of Common Stock to be transferred by such holder will be automatically transferred to the transferee of such shares of Common Stock.

**Voting Rights.** Each share of Series B Preferred Stock will entitle the holder thereof to 1,000,000 votes per share (and, for the avoidance of doubt, each fraction of a share of Series B Preferred Stock will have a ratable number of votes). Thus, each one-thousandth of a share of Series B Preferred Stock would entitle the holder thereof to 1,000 votes. The outstanding shares of Series B Preferred Stock will vote together with the outstanding shares of Common Stock of the Company as a single class exclusively with respect to (1) any proposal to adopt an amendment to the Restated Certificate of Incorporation of the Company, as amended (the “**Certificate of Incorporation**”) to reclassify the outstanding shares of Common Stock into a smaller number of shares of Common Stock at a ratio specified in or determined in accordance with the terms of such amendment (the “**Reverse Stock Split**”), and (2) any proposal to adjourn any meeting of stockholders called for the purpose of voting on the Reverse Stock Split (the “**Adjournment Proposal**”). The Series B Preferred Stock will not be entitled to vote on any other matter, except to the extent required under the Delaware General Corporation Law.

Unless otherwise provided on any applicable proxy or ballot with respect to the voting on the Reverse Stock Split or the Adjournment Proposal, the vote of each share of Series B Preferred Stock (or fraction thereof) entitled to vote on the Reverse Stock Split or the Adjournment Proposal will be cast in the same manner as the vote, if any, of the share of Common Stock (or fraction thereof) in respect of which such share of Series B Preferred Stock (or fraction thereof) was issued as a dividend is cast on the Reverse Stock Split or the Adjournment Proposal, and the proxy or ballot with respect to shares of Common Stock held by any holder on whose behalf such proxy or ballot is submitted will be deemed to include all shares of Series B Preferred Stock (or fraction thereof) held by such holder. Holders of Series B Preferred Stock will not receive a separate ballot or proxy to cast votes with respect to the Series B Preferred Stock on the Reverse Stock Split or the Adjournment Proposal.

**Dividend Rights.** The holders of Series B Preferred Stock, as such, will not be entitled to receive dividends of any kind.

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**Liquidation Preference.** As to any distribution of assets upon a liquidation, dissolution or winding up of the Company, whether voluntarily or involuntarily (a “**Dissolution**”), the Series B Preferred Stock shall rank (1) senior to the Common Stock and (2) junior to each other series or class of the Company’s Preferred Stock issued either before or after the issuance of the Series B Preferred Stock, unless the terms of any such series shall provide otherwise. Upon any Dissolution, each holder of outstanding shares of Series B Preferred Stock will be entitled to be paid out of the assets of the Company available for distribution to stockholders, prior and in preference to any distribution to the holders of Common Stock, an amount in cash equal to \$0.01 per outstanding share of Series B Preferred Stock.

**Redemption.** All shares of Series B Preferred Stock that are not present in person or by proxy at any meeting of stockholders held to vote on the Reverse Stock Split and the Adjournment Proposal as of immediately prior to the opening of the polls at such meeting (the “**Initial Redemption Time**”) will automatically be redeemed in whole, but not in part, by the Company at the Initial Redemption Time without further action on the part of the Company or the holder of shares of Series B Preferred Stock (the “**Initial Redemption**”). Any outstanding shares of Series B Preferred Stock that have not been redeemed pursuant to an Initial Redemption will be redeemed in whole, but not in part, (i) if such redemption is ordered by the Board in its sole discretion, automatically and effective on such time and date specified by the Board in its sole discretion or (ii) automatically upon the approval by the Company’s stockholders of the Reverse Stock Split at any meeting of the stockholders held for the purpose of voting on such proposal.

Each share of Series B Preferred Stock redeemed in any redemption described above will be redeemed in consideration for the right to receive an amount equal to \$0.10 in cash for each one hundred whole shares of Series B Preferred Stock that are “beneficially owned” by the “beneficial owner” (as such terms are defined in the certificate of designation with respect to the Series B Preferred Stock (the “**Certificate of Designation**”)) thereof as of the applicable redemption time and redeemed pursuant to such redemption, payable upon receipt by the Company of a written request submitted by the applicable holder to the corporate secretary of the Company (each a “**Redemption Payment Request**”) following the applicable redemption time. Such Redemption Payment Request shall (i) be in a form reasonably acceptable to the Company (ii) set forth in reasonable detail the number of shares of Series B Preferred Stock beneficially owned by the holder at the applicable redemption time and include evidence reasonably satisfactory to the Company regarding the same, and (iii) set forth a calculation specifying the amount in cash owed to such Holder by the Company with respect to the shares of Series B Preferred Stock that were redeemed at the applicable redemption time. However, the redemption consideration in respect of the shares of Series B Preferred Stock (or fractions thereof) redeemed in any redemption described above: (x) will entitle the former beneficial owners of less than one hundred whole shares of Series B Preferred Stock redeemed in any redemption to no cash payment in respect thereof and (y) will, in the case of a former beneficial owner of a number of shares of Series B Preferred Stock (or fractions thereof) redeemed pursuant to any redemption that is not equal to a whole number that is a multiple of one hundred, entitle such beneficial owner to the same cash payment, if any, in respect of such redemption as would have been payable in such redemption to such beneficial owner if the number of shares (or fractions thereof) beneficially owned by such beneficial owner and redeemed pursuant to such redemption were rounded down to the nearest whole number that is a multiple of one hundred (such, that for example, the former beneficial owner of 150 shares of Series B Preferred Stock redeemed pursuant to any redemption will be entitled to receive the same cash payment in respect of such redemption as would have been payable to the former beneficial owner of 100 shares of Series B Preferred Stock redeemed pursuant to such redemption).

The Series B Preferred Stock is not convertible into, or exchangeable for, shares of any other class or series of stock or other securities of the Company. The Series B Preferred Stock has no stated maturity and is not subject to any sinking fund. The Series B Preferred Stock is not subject to any restriction on the redemption or repurchase of shares by the Company while there is any arrearage in the payment of dividends or sinking fund installments.

The Certificate of Designation was filed with the Delaware Secretary of State and became effective on November 17, 2022. The foregoing description of the Series B Preferred Stock does not purport to be complete and is qualified in its entirety by reference to the Certificate of Designation, which is filed as Exhibit 3.2 to this Current Report on Form 8-K and is incorporated herein by reference.

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

(d) Exhibits

**EXHIBIT INDEX**

<b>Exhibit Number</b>	<b>Description</b>
<a href="#">3.1</a>	<a href="#">Second Amended and Restated Bylaws of Idera Pharmaceuticals, Inc.</a>
<a href="#">3.2</a>	<a href="#">Certificate of Designation of Series B Preferred Stock of Idera Pharmaceuticals, Inc.</a>
104	Cover Page Interactive Data File (embedded within Inline XBRL document)

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**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.

Date: November 17, 2022

**IDERA PHARMACEUTICALS, INC.**

By: /s/ Bryant D. Lim

Bryant D. Lim, Chief Business Officer and General Counsel

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SECOND AMENDED AND RESTATED  
BY-LAWS  
OF  
IDERA PHARMACEUTICALS, INC.

As further amended on November 17, 2022

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SECOND AMENDED AND RESTATED BY-LAWS OF

IDERA PHARMACEUTICALS, INC.

ARTICLE 1 - Stockholders

1.1 Place of Meetings. All meetings of stockholders shall be held at such place within or without the State of Delaware as may be designated from time to time by the Board of Directors or the Chief Executive Officer, or if there is no Chief Executive Officer, the President, or, if not so designated, at the registered office of the corporation.

1.2 Annual Meeting. The annual meeting of stockholders for the election of directors and for the transaction of such other business as may properly be brought before the meeting shall be held within six months after the end of each fiscal year of the corporation on a date to be fixed by the Board of Directors or the Chief Executive Officer, or if there is no Chief Executive Officer, the President (which date shall not be a legal holiday in the place where the meeting is to be held), at the time and place to be fixed by the Board of Directors or the Chief Executive Officer, or if there is no Chief Executive Officer, the President, and stated in the notice of the meeting. A meeting of the stockholders may be held solely or in part by means of remote communication consistent with the applicable provisions of the Delaware General Corporation Law. If no annual meeting is held in accordance with the foregoing provisions, the Board of Directors shall cause the meeting to be held as soon thereafter as convenient. If no annual meeting is held in accordance with the foregoing provisions, a special meeting may be held in lieu of the annual meeting, and any action taken at that special meeting shall have the same effect as if it had been taken at the annual meeting, and in such case all references in these By-Laws to the annual meeting of the stockholders shall be deemed to refer to such special meeting.

1.3 Special Meetings. Special meetings of stockholders may be called at any time by the Chief Executive Officer, or if there is no Chief Executive Officer, the President, or by the Board of Directors. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting.

1.4 Notice of Meetings. Except as otherwise provided by law, written notice of each meeting of stockholders, whether annual or special, shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. The notices of all meetings shall state the place, date and hour of the meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at his address as it appears on the records of the corporation.

1.5 Voting List. The officer who has charge of the stock ledger of the corporation shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least 10 days prior to the meeting, at a place within the city where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the whole time of the meeting, and may be inspected by any stockholder who is present.

1.6 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these By-Laws, the presence, in person or by proxy, of the holders of at least one-third (33.3%) in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting shall constitute a quorum for the transaction of business at a meeting of stockholders. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.7 Adjournments. The Chairman of the Board or, in the absence of the Chairman of the Board (including an absence because no Chairman of the Board shall have been designated), the Chief Executive Officer, the President, or, in the absence of all of them, a Vice President, or, in the absence of all of them, a person designated by the Board, or in the absence of all of them, a person designated by the holders of a majority of the outstanding shares of capital stock of the corporation present in person or by proxy and entitled to vote at such meeting shall act as the chairman of such meeting. The chairman of each meeting of stockholders shall call such meeting to order, determine the order of business at such meeting and otherwise preside over such meeting. The chairman of any meeting shall have the right and authority to convene and (for any or no reason) to recess and/or adjourn the meeting, regardless of whether a quorum is present, to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of the chairman of such meeting, are appropriate for the proper conduct of the meeting.

1.8 Voting and Proxies. Each stockholder shall have one vote for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by the General Corporation Law of the State of Delaware, the Certificate of Incorporation or these By-Laws. Each stockholder of record entitled to vote at a meeting of stockholders, or to express consent or dissent to corporate action in writing without a meeting, may vote or express such consent or dissent in person or may authorize another person or persons to vote or act for him by written proxy executed by the stockholder or his authorized agent and delivered to the Secretary of the corporation. No such proxy shall be voted or acted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.9 Action at Meeting. When a quorum is present at any meeting, the holders of a majority of the stock present or represented and voting on a matter (or if there are two or more classes of stock entitled to vote as separate classes, then in the case of each such class, the holders of a majority of the stock of that class present or represented and voting on a matter) shall decide any matter to be voted upon by the stockholders at such meeting, except when a different vote is required by express provision of law, the Certificate of Incorporation or these By-Laws. Any election by stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote at the election.

1.10 Nomination of Directors. Only persons who are nominated in accordance with the following procedures shall be eligible for election as directors. Nomination for election to the Board of Directors of the corporation at a meeting of stockholders may be made by the Board of Directors or by any stockholder of the corporation entitled to vote for the election of directors at such meeting who complies with the notice procedures set forth in this Section 1.10. Such nominations, other than those made by or on behalf of the Board of Directors, shall be made by notice in writing delivered or mailed by first class United States mail, postage prepaid, to the Secretary, and received not less than 60 days nor more than 90 days prior to such meeting; provided, however, that if less than 70 days' notice or prior public disclosure of the date of the meeting is given to stockholders, such nomination shall have been mailed or delivered to the Secretary not later than the close of business on the 10th day following the date on which the notice of the meeting was mailed or such public disclosure was made, whichever occurs first. Such notice shall set forth (a) as to each proposed nominee (i) the name, age, business address and, if known; residence address of each such nominee, (ii) the principal occupation or employment of each such nominee, (iii) the number of shares of stock of the corporation which are beneficially owned by each such nominee, and (iv) any other information concerning the nominee that must be disclosed as to nominees in proxy solicitations pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (including such person's written consent to be named as a nominee and to serve as a director if elected); and (b) as to the stockholder giving the notice (i) the name and address, as they appear on the corporation's books, of such stockholder and (ii) the class and number of shares of the corporation which are beneficially owned by such stockholder. The corporation may require any proposed nominee to furnish such other information as may reasonably be required by the corporation to determine the eligibility of such proposed nominee to serve as a director of the corporation.

The chairman of the meeting may, if the facts warrant, determine and declare to the meeting that a nomination was not made in accordance with the foregoing procedure, and if he should so determine, he shall so declare to the meeting and the defective nomination shall be disregarded.

1.11 Notice of Business at Annual Meetings. At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be (a) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board of Directors, (b) otherwise properly brought before the meeting by or at the direction of the Board of Directors, or (c) otherwise properly brought before an annual meeting by a stockholder. For business to be properly brought before an annual meeting by a stockholder, if such business relates to the election of directors of the corporation, the procedures in Section 1.10 must be complied with. If such business relates to any other matter, the stockholder must have given timely notice thereof in writing to the Secretary. To be timely, a stockholder's notice must be delivered to or mailed and received at the principal executive offices of the corporation not less than 60 days nor more than 90 days prior to the meeting; provided, however, that in the event that less than 70 days' notice or prior public disclosure of the date of the meeting is given or made to stockholders, notice by the stockholder to be timely must be so received not later than the close of business on the 10th day following the date on which such notice of the date of the meeting was mailed or such public disclosure was made, whichever occurs first. A stockholder's notice to the Secretary shall set forth as to each matter the stockholder proposes to bring before the annual meeting (a) a brief description of the business desired to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (b) the name and address, as they appear on the corporation's books, of the stockholder proposing such business, (c) the class and number of shares of the corporation which are beneficially owned by the stockholder, and (d) any material interest of the stockholder in such business. Notwithstanding anything in these By-Laws to the contrary, no business shall be conducted at any annual meeting except in accordance with the procedures set forth in this Section 1.11 and except that any stockholder proposal which complies with Rule 14a-8 of the proxy rules (or any successor provision) promulgated under the Securities Exchange Act of 1934, as amended, and is to be included in the corporation's proxy statement for an annual meeting of stockholders shall be deemed to comply with the requirements of this Section 1.11.

The chairman of the meeting shall, if the facts warrant, determine and declare to the meeting that business was not properly brought before the meeting in accordance with the provisions of this Section 1.11, and if he should so determine, the chairman shall so declare to the meeting that any such business not properly brought before the meeting shall not be transacted.

1.12 Action without Meeting. Until the closing of a firm commitment, underwritten public offering of the corporation's Common Stock (a "Public Offering"), any action required or permitted to be taken at any annual or special meeting of stockholders of the corporation may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote on such action were present and voted. Prompt notice of the taking of corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing. Effective upon the closing of a Public Offering, stockholders may not take any action by written consent in lieu of a meeting.

1.13 Organization. The Chairman of the Board, or in his absence the Vice Chairman of the Board designated by the Chairman of the Board, the Chief Executive Officer or the President in the order named, shall call meetings of the stockholders to order, and shall act as chairman of such meeting, provided, however, that the Board of Directors may appoint any stockholder to act as chairman of any meeting in the absence of the Chairman of the Board, the Chief Executive Officer or the President. The Secretary of the corporation shall act as secretary at all meetings of the stockholders; but in the absence of the Secretary at any meeting of the stockholders, the presiding officer may appoint any person to act as secretary of the meeting.

## ARTICLE 2 - Directors

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law, the Certificate of Incorporation or these By-Laws. In the event of a vacancy in the Board of Directors, the remaining directors, except as otherwise provided by law, may exercise the powers of the full Board until the vacancy is filled.

2.2 Number; Election and Qualification. The number of directors which shall constitute the whole Board of Directors shall be determined by resolution of the Board of Directors, but in no event shall be less than three. The number of directors may be decreased at any time and from time to time by a majority of the directors then in office, but only to eliminate vacancies existing by reason of the death, resignation, removal or expiration of the term of one or more directors. The directors shall be elected at the annual meeting of stockholders by such stockholders as have the right to vote on such election. Directors need not be stockholders of the corporation.

2.3 Classes of Directors. The Board of Directors shall be and is divided into three classes: Class I, Class II and Class III. No one class shall have more than one director more than any other class. If a fraction is contained in the quotient arrived at by dividing the designated number of directors by three, then, if such fraction is one-third, the extra director shall be a member of Class I, and if such fraction is two-thirds, one of the extra directors shall be a member of Class I and one of the extra directors shall be a member of Class II, unless otherwise provided from time to time by resolution adopted by the Board of Directors.

2.4 Terms of Office. Each director shall serve for a term ending on the date of the third annual meeting following the annual meeting at which such director was elected; provided, that each initial director in Class I shall serve for a term ending on the date of the annual meeting of stockholders in 1995; and each initial director in Class II shall serve for a term ending on the date of the annual meeting of stockholders in 1996 and that each initial director in Class III shall serve for a term ending on the date of the annual meeting of stockholders in 1997; and provided further, that the term of each director shall be subject to the election and qualification of his successor and to his earlier death, resignation or removal.

2.5 Allocation of Directors Among Classes in the Event of Increases or Decreases in the Number of Directors. In the event of any increase or decrease in the authorized number of directors, (i) each director then serving as such shall nevertheless continue as a director of the class of which he is a member and (ii) the newly created or eliminated directorships resulting from such increase or decrease shall be apportioned by the Board of Directors among the three classes of directors so as to ensure that no one class has more than one director more than any other class. To the extent possible, consistent with the foregoing rule, any newly created directorships shall be added to those classes whose terms of office are to expire at the latest dates following such allocation, and any newly eliminated directorships shall be subtracted from those classes whose terms of offices are to expire at the earliest dates following such allocation, unless otherwise provided from time to time by resolution adopted by the Board of Directors.

2.6 Vacancies. Any vacancy in the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the Board, shall be filled only by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy shall be elected for the unexpired term of his predecessor in office, and a director chosen to fill a position resulting from an increase in the number of directors shall hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of his successor and to his earlier death, resignation or removal.

2.7 Resignation. Any director may resign by delivering his written resignation to the corporation at its principal office or to the President or Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

2.8 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place, either within or without the State of Delaware, as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.9 Special Meetings. Special meetings of the Board of Directors may be held at any time and place, within or without the State of Delaware, designated in a call by the Chairman of the Board, Chief Executive Officer, or if there is no Chief Executive Officer, the President, two or more directors, or by one director in the event that there is only a single director in office.

2.10 Notice of Special Meetings. Notice of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (i) by giving notice to such director in person or by telephone at least 24 hours in advance of the meeting, (ii) by sending a telegram, telecopy, or telex, or delivering written notice by hand, to his last known business or home address at least 24 hours in advance of the meeting, or (iii) by mailing written notice to his last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.11 Meetings by Telephone Conference Calls. Directors or any members of any committee designated by the directors may participate in a meeting of the Board of Directors or such committee by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.12 Quorum. A majority of the total number of the whole Board of Directors shall constitute a quorum at all meetings of the Board of Directors. In the event one or more of the directors shall be disqualified to vote at any meeting, then the required quorum shall be reduced by one for each such director so disqualified; provided, however, that in no case shall less than one-third (1/3) of the number so fixed constitute a quorum. In the absence of a quorum at any such meeting, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.13 Action at Meeting. At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of those present shall be sufficient to take any action, unless a different vote is specified by law, the Certificate of Incorporation or these By-Laws.

2.14 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee of the Board of Directors may be taken without a meeting, if all members of the Board or committee, as the case may be, consent to the action in writing, and the written consents are filed with the minutes of proceedings of the Board or committee.

2.15 Removal. Directors of the corporation may be removed only for cause by the affirmative vote of the holders of two thirds of the shares of the capital stock of the corporation issued and outstanding and entitled to vote.

2.16 Committees. The Board of Directors may, by resolution passed by a majority of the whole Board, designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members of the committee present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of the General Corporation Law of the State of Delaware, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers which may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time-to-time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these By-Laws for the Board of Directors.

2.17 Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of Directors may from time to time determine. No such payment shall preclude any director from serving the corporation or any of its parent or subsidiary corporations in any other capacity and receiving compensation for such service.

ARTICLE 3 - Officers

3.1 Enumeration. The officers of the corporation shall consist of a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors shall determine, including a Chairman of the Board, a Vice-Chairman of the Board, a Chief Executive Officer, and one or more Vice Presidents, Assistant Treasurers, and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The Chief Executive Officer, President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, by the Certificate of Incorporation or by these By-Laws, each officer shall hold office until his successor is elected and qualified, unless a different term is specified in the vote choosing or appointing him, or until his earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering his written resignation to the corporation at its principal office or to the Chief Executive Officer, President or Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

Any officer may be removed at any time, with or without cause, by vote of a majority of the entire number of directors then in office.

Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following his resignation or removal, or any right to damages on account of such removal, whether his compensation be by the month or by the year or otherwise, unless such compensation is expressly provided in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices other than those of President, Treasurer and Secretary. Each such successor shall hold office for the unexpired term of his predecessor and until his successor is elected and qualified, or until his earlier death, resignation or removal.

3.7 Chairman of the Board and Vice-Chairman of the Board. The Board of Directors may appoint a Chairman of the Board and may designate the Chairman of the Board as Chief Executive Officer. If the Board of Directors appoints a Chairman of the Board, he shall perform such duties and possess such powers as are assigned to him by the Board of Directors. If the Board of Directors appoints a Vice-Chairman of the Board, he shall, in the absence or disability of the Chairman of the Board, perform the duties and exercise the powers of the Chairman of the Board and shall perform such other duties and possess such other powers as may from time to time be vested in him by the Board of Directors.

3.8 Chief Executive Officer. The Board of Directors may appoint a Chief Executive Officer. If the Board of Directors appoints a Chief Executive Officer, he shall perform such duties and possess such powers as are assigned to him by the Board of Directors.

3.9 President. The President shall, subject to the direction of the Board of Directors, have general charge and supervision of the business of the corporation. Unless otherwise provided by the Board of Directors, he shall preside at all meetings of the stockholders and, if he is a director, at all meetings of the Board of Directors. Unless the Board of Directors has designated the Chairman of the Board or another officer as Chief Executive Officer, the President shall be the Chief Executive Officer of the corporation. The President shall perform such other duties and shall have such other powers as the Board of Directors may from time to time prescribe.

3.10 Vice Presidents. Any Vice President shall perform such duties and possess such powers as the Board of Directors or the President may from time to time prescribe. In the event of the absence, inability or refusal to act of the President, the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the President and when so performing shall have all the powers of and be subject to all the restrictions upon the President. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.11 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the President may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the President or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary, (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the person presiding at the meeting shall designate a temporary secretary to keep a record of the meeting.

3.12 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned to him by the Board of Directors or the President. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these By-Laws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.



The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the President or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer, (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.13 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

#### ARTICLE 4 - Capital Stock

4.1 Issuance of Stock. Unless otherwise voted by the stockholders and subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any unissued balance of the authorized capital stock of the corporation held in its treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such consideration and on such terms as the Board of Directors may determine.

4.2 Certificates of Stock. Every holder of stock of the corporation shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, certifying the number and class of shares owned by him in the corporation. Each such certificate shall be signed by, or in the name of the corporation by, the Chairman or Vice-Chairman, if any, of the Board of Directors, or the President or a Vice President, and the Treasurer or an Assistant Treasurer, or the Secretary or an Assistant Secretary of the corporation. Any or all of the signatures on the certificate may be a facsimile.

Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of Incorporation, the By-Laws, applicable securities laws or any agreement among any number of shareholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

4.3 Transfers. Except as otherwise established by rules and regulations adopted by the Board of Directors, and subject to applicable law, shares of stock may be transferred on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these By-Laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these By-Laws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock in place of any previously issued certificate alleged to have been lost, stolen, or destroyed, upon such terms and conditions as the Board of Directors may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity as the Board of Directors may require for the protection of the corporation or any transfer agent or registrar.

4.5 Record Date. The Board of Directors may fix in advance a date as a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders or to express consent (or dissent) to corporate action in writing without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 60 days prior to any other action to which such record date relates.

If no record date is fixed, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day before the day on which notice is given, or, if notice is waived, at the close of business on the day before the day on which the meeting is held. The record date for determining stockholders entitled to express consent to corporate action in writing without a meeting, when no prior action by the Board of Directors is necessary, shall be the day on which the first written consent is expressed. The record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

#### ARTICLE 5 - General Provisions

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January in each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Waiver of Notice. Whenever any notice whatsoever is required to be given by law, by the Certificate of Incorporation or by these By-Laws, a waiver of such notice either in writing signed by the person entitled to such notice or such person's duly authorized attorney, or by telegraph, cable or any other available method, whether before, at or after the time stated in such waiver, or the appearance of such person or persons at such meeting in person or by proxy, shall be deemed equivalent to such notice.

5.4 Voting of Securities. Except as the directors may otherwise designate, the Chief Executive Officer, President or Treasurer may waive notice of, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at, any meeting of stockholders or shareholders of any other corporation or organization, the securities of which may be held by this corporation.

5.5 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.6 Certificate of Incorporation. All references in these By-Laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and in effect from time to time.

5.7 Transactions with Interested Parties. No contract or transaction between the corporation and one or more of the directors or officers, or between the corporation and any other corporation, partnership, association, or other organization in which one or more of the directors or officers are directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the Board of Directors or a committee of the Board of Directors which authorizes the contract or transaction or solely because his or their votes are counted for such purpose, if:

(1) The material facts as to his relationship or interest and as to the contract or transaction are disclosed or are known to the Board of Directors or the committee, and the Board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum;

(2) The material facts as to his relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the stockholders; or

(3) The contract or transaction is fair as to the corporation as of the time it is authorized, approved or ratified, by the Board of Directors, a committee of the Board of Directors, or the stockholders.

Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board of Directors or of a committee which authorizes the contract or transaction.

5.8 Severability. Any determination that any provision of these By-Laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these By-Laws.

5.9 Pronouns. All pronouns used in these By-Laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

#### ARTICLE 6 - Amendments

6.1 By the Board of Directors. These By-Laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present.

6.2 By the Stockholders. Except as otherwise provided in Section 6.3, these By-Laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote, provided notice of such alteration, amendment, repeal or adoption of new by-laws shall have been stated in the notice of such special meeting.

6.3 Certain Provisions. Notwithstanding any other provision of law, the Certificate of Incorporation or these By-Laws, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the shares of the capital stock of the corporation issued and outstanding and entitled to vote shall be required to amend or repeal, or to adopt any provision inconsistent with Section 1.3, Section 1.10, Section 1.11, Section 1.12, Section 1.13, Article 2 or Article 6 of these By-Laws.

ARTICLE 7 – Forum Selection

Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery (the “Chancery Court”) of the State of Delaware (or, in the event that the Chancery Court does not have jurisdiction, the federal district court for the District of Delaware or other state courts of the State of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for (a) any derivative action or proceeding brought on behalf of the corporation, (b) any action asserting a claim of breach of a fiduciary duty owed by any director, officer, other employee or stockholder of the corporation to the corporation or to the corporation’s stockholders, (c) any action arising pursuant to any provision of the Law or the Certificate of Incorporation or these By-Laws (as either may be amended from time to time), (d) any action to interpret, apply, enforce or determine the validity of the Certificate of Incorporation or these By-Laws or (e) any action asserting a claim against the corporation governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of the corporation shall be deemed to have notice of, and to have consented to, the provisions of this Article 7.

**IDERA PHARMACEUTICALS, INC.**  
**CERTIFICATE OF DESIGNATIONS, PREFERENCES,  
RIGHTS AND LIMITATIONS  
OF  
SERIES B PREFERRED STOCK**

Pursuant to Section 151 of the  
General Corporation Law of the State of Delaware

THE UNDERSIGNED DOES HEREBY CERTIFY, on behalf of Idera Pharmaceuticals, Inc., a Delaware corporation (the “*Corporation*”), that the following resolution was duly adopted by the Board of Directors of the Corporation (the “*Board of Directors*”), in accordance with the provisions of Section 151 of the General Corporation Law of the State of Delaware (the “*DGCL*”), on November 17, 2022, which resolution provides for the creation of a series of the Corporation’s Preferred Stock, par value \$0.01 per share, which is designated as “*Series B Preferred Stock*,” with the preferences, rights and limitations set forth therein relating to dividends, conversion, redemption, dissolution and distribution of assets of the Corporation

**WHEREAS:** the Certificate of Incorporation of the Corporation, as amended (the “*Certificate of Incorporation*”), provides for a class of its authorized stock known as preferred stock, consisting of 5,000,000 shares, \$0.01 par value per share (the “*Preferred Stock*”), issuable from time to time in one or more series.

**RESOLVED:** that, pursuant to authority conferred upon the Board of Directors by the Certificate of Incorporation, (i) a series of Preferred Stock of the Corporation be, and hereby is authorized by the Board of Directors, (ii) the Board of Directors hereby authorizes the issuance of 200,000 shares of “*Series B Preferred Stock*” and (iii) the Board of Directors hereby fixes the designations, powers, preferences and relative, participating, optional or other special rights, and the qualifications, limitations or restrictions thereof, of such shares of Preferred Stock, in addition to any provisions set forth in the Certificate of Incorporation that are applicable to the Preferred Stock of all classes and series, as follows:

**TERMS OF PREFERRED STOCK**

1. **Definitions.** For the purposes hereof, the following terms shall have the following meanings:

1.1 “*Adjournment Proposal*” means any proposal to adjourn any meeting of stockholders called for the purpose of voting on the Reverse Stock Split.

1.2 “*Common Stock*” means the Corporation’s common stock, par value \$0.001 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed.

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1.3 “**Person**” shall mean any individual, firm, corporation, partnership, limited liability company, trust or other entity, and shall include any successor (by merger or otherwise) to such entity.

1.4 “**Redemption Time**” shall mean (i) with respect to the Initial Redemption, the Initial Redemption Time and (ii) with respect to the Subsequent Redemption, the Subsequent Redemption Time.

1.5 “**Reverse Stock Split**” means any proposal to adopt an amendment to the Certificate of Incorporation to reclassify the outstanding shares of Common Stock into a smaller number of shares of Common Stock at a ratio specified in or determined in accordance with the terms of such proposal.

1.6 “**Subsequent Redemption Time**” shall mean the effective time of the Subsequent Redemption.

2. **Designation, Amount and Par Value.** The series of Preferred Stock created hereby shall be designated as the Series B Preferred Stock (the “**Series B Preferred Stock**”), and the number of shares so designated shall be 200,000. Each share of Series B Preferred Stock shall have a par value of \$0.01 per share.

3. **Dividends.** The holders of Series B Preferred Stock, as such, shall not be entitled to receive dividends of any kind.

4. **Voting Rights.** Except as otherwise provided by the Certificate of Incorporation or required by law, the holders of shares of Series B Preferred Stock shall have the following voting rights:

4.1 Except as otherwise provided herein or as otherwise required by the DGCL, each outstanding share of Series B Preferred Stock shall have 1,000,000 votes per share (and, for the avoidance of doubt, each fraction of a share of Series B Preferred Stock shall have a ratable number of votes). The outstanding shares of Series B Preferred Stock shall vote together with the outstanding shares of Common Stock, of the Corporation as a single class exclusively with respect to the Reverse Stock Split and the Adjournment Proposal and shall not be entitled to vote on any other matter except to the extent required under the DGCL. Notwithstanding the foregoing, and for the avoidance of doubt, each share of Series B Preferred Stock (or fraction thereof) redeemed pursuant to the Initial Redemption (as defined below) shall have no voting power with respect to, and the holder of each share of Series B Preferred Stock (or fraction thereof) redeemed pursuant to the Initial Redemption shall have no voting power with respect to any such share of Series B Preferred Stock (or fraction thereof) on, the Reverse Stock Split and the Adjournment Proposal or any other matter brought before any meeting of stockholders held to vote on the Reverse Stock Split.

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4.2 Unless otherwise provided on any applicable proxy or ballot with respect to the voting on the Reverse Stock Split or the Adjournment Proposal, the vote of each share of Series B Preferred Stock (or fraction thereof) entitled to vote on the Reverse Stock Split or the Adjournment Proposal shall be cast in the same manner as the vote, if any, of the share of Common Stock (or fraction thereof) in respect of which such share of Series B Preferred Stock (or fraction thereof) was issued as a dividend is cast on the Reverse Stock Split or the Adjournment Proposal, as applicable, and the proxy or ballot with respect to shares of Common Stock held by any holder on whose behalf such proxy or ballot is submitted will be deemed to include all shares of Series B Preferred Stock (or fraction thereof) held by such holder. Holders of Series B Preferred Stock will not receive a separate ballot or proxy to cast votes with respect to the Series B Preferred Stock on the Reverse Stock Split or the Adjournment Proposal brought before any meeting of stockholders held to vote on the Reverse Stock Split.

5. **Rank; Liquidation**

5.1 As to any distribution of assets upon a liquidation, dissolution or winding up of the Corporation, whether voluntarily or involuntarily (a "***Dissolution***"), the Series B Preferred Stock shall rank (1) senior to the Common Stock and (2) junior to each other series or class of the Corporation's Preferred Stock issued either before or after the issuance of the Series B Preferred Stock, unless the terms of any such series shall provide otherwise. For the avoidance of any doubt, but without limiting the foregoing, neither the merger or consolidation of the Corporation with or into any other entity, nor the sale, lease, exchange or other disposition of all or substantially all of the Corporation's assets shall, in and of itself, be deemed to constitute a Dissolution.

5.2 Upon any Dissolution, each holder of outstanding shares of Series B Preferred Stock shall be entitled to be paid out of the assets of the Corporation available for distribution to stockholders, prior and in preference to any distribution to the holders of Common Stock, an amount in cash equal to \$0.001 per outstanding share of Series B Preferred Stock.

6. **Redemption**

6.1 All shares of Series B Preferred Stock that are not present in person or by proxy at any meeting of stockholders held to vote on the Reverse Stock Split and the Adjournment Proposal as of immediately prior to the opening of the polls at such meeting (the "***Initial Redemption Time***") shall automatically be redeemed by the Corporation at the Initial Redemption Time without further action on the part of the Corporation or the holder thereof (the "***Initial Redemption***").

6.2 Any outstanding shares of Series B Preferred Stock that have not been redeemed pursuant to an Initial Redemption shall be redeemed in whole, but not in part, (i) if such redemption is ordered by the Board of Directors in its sole discretion, automatically and effective on such time and date specified by the Board of Directors in its sole discretion or (ii) automatically upon the approval by the Corporation's stockholders of the Reverse Stock Split at any meeting of the stockholders held for the purpose of voting on such proposal (any such redemption pursuant to this Section 6.2, the "***Subsequent Redemption***" and, together with the Initial Redemption, the "***Redemptions***").

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6.3 Each share of Series B Preferred Stock redeemed in any Redemption pursuant to this Section 6 shall be redeemed in consideration for the right to receive an amount equal to \$0.10 in cash for each one hundred whole shares of Series B Preferred Stock that are “*beneficially owned*” by the “*beneficial owner*” (as such terms are defined below) thereof as of the applicable Redemption Time and redeemed pursuant to such Redemption, payable upon receipt by the Corporation of a written request submitted by the applicable holder to the corporate secretary of the Corporation (each a “*Redemption Payment Request*”) following the applicable Redemption Time. Such Redemption Payment Request shall (i) be in a form reasonably acceptable to the Corporation (ii) set forth in reasonable detail the number of shares of Series B Preferred Stock beneficially owned by the holder at the applicable Redemption Time and include evidence reasonably satisfactory to the Corporation regarding the same, and (iii) set forth a calculation specifying the amount in cash owed to such Holder by the Corporation with respect to the shares of Series B Preferred Stock that were redeemed at the applicable Redemption Time. For the avoidance of doubt, the redemption consideration in respect of the shares of Series B Preferred Stock (or fractions thereof) redeemed in any Redemption pursuant to this Section 6: (x) shall entitle the former beneficial owners of less than one hundred whole shares of Series B Preferred Stock redeemed in any Redemption to no cash payment in respect thereof and (y) shall, in the case of a former beneficial owner of a number of shares of Series B Preferred Stock (or fractions thereof) redeemed pursuant to any Redemption that is not equal to a whole number that is a multiple of one hundred, entitle such beneficial owner to the same cash payment, if any, in respect of such Redemption as would have been payable in such Redemption to such beneficial owner if the number of shares (or fractions thereof) beneficially owned by such beneficial owner and redeemed pursuant to such Redemption were rounded down to the nearest whole number that is a multiple of one hundred (such, that for example, the former beneficial owner of 150 shares of Series B Preferred Stock redeemed pursuant to any Redemption shall be entitled to receive the same cash payment in respect of such Redemption as would have been payable to the former beneficial owner of 100 shares of Series B Preferred Stock redeemed pursuant to such Redemption). As used herein, a Person shall be deemed the “*beneficial owner*” of, and shall be deemed to “*beneficially own*,” any securities which such Person is deemed to beneficially own, directly or indirectly, within the meaning of Rule 13d-3 of the General Rules and Regulations under the Securities Exchange Act of 1934, as amended.

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6.4 From and after the time at which any shares of Series B Preferred Stock are called for redemption (whether automatically or otherwise) in accordance with Section 6.1 or 6.2, such shares of Series B Preferred Stock shall cease to be outstanding, and the only right of the former holders of such shares of Series B Preferred Stock, as such, will be to receive the applicable redemption price, if any. The shares of Series B Preferred Stock redeemed by the Corporation pursuant to this Certificate of Designation shall, upon such redemption, be automatically retired and restored to the status of authorized but unissued shares of Preferred Stock. Notwithstanding anything to the contrary herein or otherwise, and for the avoidance of doubt, any shares of Series B Preferred Stock (or fraction thereof) that have been redeemed pursuant to an Initial Redemption shall not be deemed to be outstanding for the purpose of voting or determining the number of votes entitled to vote on any matter submitted to stockholders (including the Reverse Stock Split, the Adjournment Proposal or any other matter brought before any meeting of stockholders held to vote on the Reverse Stock Split) from and after the time of the Initial Redemption. Notice of any meeting of stockholders for the submission to stockholders of any proposal to approve the Reverse Stock Split shall constitute notice of a redemption of shares of Series B Preferred Stock pursuant to an Initial Redemption and result in the automatic redemption of the applicable shares of Series B Preferred Stock (and/or fractions thereof) pursuant to the Initial Redemption at the Initial Redemption Time pursuant to Section 6.1 hereof. Notice by the Corporation of the approval by the Corporation's stockholders of the Reverse Stock Split, whether by press release or a filing with the Securities and Exchange Commission, shall constitute a notice of redemption of shares of Series B Preferred Stock pursuant to a Subsequent Redemption and result in the automatic redemption of the applicable shares of Series B Preferred Stock (and/or fractions thereof) pursuant to the Subsequent Redemption at the Subsequent Redemption Time pursuant to Section 6.1 hereof. In connection with the filing of this Certificate of Designation, the Corporation has set apart funds for payment for the redemption of all shares of Series B Preferred Stock pursuant to the Redemptions and shall continue to keep such funds apart for such payment through the payment of the purchase price for the redemption of all such shares.

7. **Transfer.** Shares of Series B Preferred Stock will be uncertificated and represented in book-entry form. No shares of Series B Preferred Stock may be transferred by the holder thereof except in connection with a transfer by such holder of any shares of Common Stock held thereby, in which case a number of one one-thousandths (1/1000ths) of a share of Series B Preferred Stock equal to the number of shares of Common Stock to be transferred by such holder shall be automatically transferred to the transferee of such shares of Common Stock. Notice of the foregoing restrictions on transfer shall be given in accordance with Section 151 of the DGCL.

8. **Fractional Shares.** The Series B Preferred Stock may be issued in whole shares or in any fraction of a share that is one one-thousandth (1/1000th) of a share or any integral multiple of such fraction, which fractions shall entitle the holder, in proportion to such holder's fractional shares, to exercise voting rights, participate in distributions upon a Dissolution and have the benefit of any other rights of holders of Series B Preferred Stock.

9. **Severability.** Whenever possible, each provision hereof shall be interpreted in a manner as to be effective and valid under applicable law, but if any provision hereof is held to be prohibited by or invalid under applicable law, then such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating or otherwise adversely affecting the remaining provisions hereof.

*[Remainder of Page Intentionally Left Blank]*

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IN WITNESS WHEREOF, the Idera Pharmaceuticals, Inc. has caused this Certificate of Designation of Preferences, Rights and Limitations to be duly executed by its Chief Business Officer and General Counsel this 17<sup>th</sup> day of November 2022.

**IDERA PHARMACEUTICALS, INC.**

By: /s/ Bryant D. Lim

Name: Bryant D. Lim

Title: Chief Business Officer and General Counsel

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