

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

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

Xilio Therapeutics, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

828 Winter Street, Suite 300
Waltham, Massachusetts
(Address of Principal Executive Offices)

85-1623397
(I.R.S. Employer
Identification No.)

02451
(Zip Code)

2021 Stock Incentive Plan
2021 Employee Stock Purchase Plan
2022 Inducement Stock Incentive Plan
(Full Title of the Plan)

René Russo
Chief Executive Officer
Xilio Therapeutics, Inc.
828 Winter Street, Suite 300
Waltham, Massachusetts 02451
(Name and Address of Agent for Service)

(857) 524-2466
(Telephone Number, Including Area Code, of Agent for Service)

Copy to:

Chris Frankenfield
Chief Legal and Administrative Officer
Xilio Therapeutics, Inc.
828 Winter Street, Suite 300
Waltham, Massachusetts 02451
(857) 524-2466

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
Non-accelerated filer

Accelerated filer
Smaller reporting company
Emerging growth company

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

Statement of Incorporation by Reference

This Registration Statement on Form S-8 is being filed by Xilio Therapeutics, Inc. (the "Registrant") to register (a) 1,373,580 shares of the Registrant's common stock, \$0.0001 par value per share ("Common Stock"), issuable under the Registrant's 2021 Stock Incentive Plan (the "2021 Plan"), (b) 274,716 shares of Common Stock issuable under the Registrant's 2021 Employee Stock Purchase Plan ("2021 ESPP") and (c) 275,000 shares of Common Stock issuable under the Registrant's 2022 Inducement Stock Incentive Plan. Only with respect to the 2021 Plan and the 2021 ESPP, this Registration Statement incorporates by reference the contents of the Registration Statements on Form S-8, filed with the Securities and Exchange Commission ("SEC") on October 25, 2021 (File No. 333-260460) and March 1, 2022 (File No. 333-263178) by the Registrant relating to the 2021 Plan and the 2021 ESPP, except as otherwise set forth below.

PART I

Item 1. Plan Information.

The information required by Item 1 is omitted from this registration statement and included in documents sent or given to participants in the plan covered by this registration statement pursuant to Rule 428(b)(1) of the Securities Act of 1933, as amended (the “Securities Act”) and the Note to Part I of Form S-8.

Item 2. Registrant Information and Employee Plan Annual Information.

The written statement required by Item 2 is omitted from this registration statement and included in documents sent or given to participants in the plan covered by this registration statement pursuant to Rule 428(b)(1) of the Securities Act and the Note to Part I of Form S-8.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The Registrant hereby incorporates by reference into this Registration Statement the following documents which have been previously filed (not furnished) with the SEC:

- (a) the Registrant’s Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on [March 2, 2023](#) (File No. 001-40925); and
- (b) the description of the Common Stock contained in the Registrant’s Registration Statement on Form 8-A filed with the SEC on [October 18, 2021](#) pursuant to Section 12 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as the description therein has been updated and superseded by the description of our Common Stock contained in Exhibit 4.3 to our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on [March 1, 2022](#), and including any amendments or reports filed for the purpose of updating such description (File No. 001-40925).

In addition, all other documents filed (not furnished) by the Registrant pursuant to Section 13(a), Section 13(c), Section 14 or Section 15(d) of the Exchange Act on or after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered hereby have been sold or that deregisters all securities then remaining unsold shall be deemed to be incorporated in this Registration Statement by reference and to be a part of this Registration Statement from the date of filing of such documents; *provided, however*, that documents or information deemed to have been furnished to and not filed with the SEC in accordance with the rules of the SEC shall not be deemed incorporated by reference into this Registration Statement.

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 subsequently filed document which also is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, 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.

The following summary is qualified in its entirety by reference to the complete Delaware General Corporation Law (“DGCL”) and the registrant’s Restated Certificate of Incorporation (the “Certificate”) and the registrant’s Amended and Restated Bylaws (the “Bylaws”).

Section 145 of the DGCL provides, generally, that a corporation shall have the power to 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 (except actions 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 against all expenses, 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, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. A corporation may similarly indemnify such person for expenses actually and reasonably incurred by such person in connection with the defense or settlement of any action or suit by or in the right of the corporation, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in the case of claims, issues and matters as to which such person shall have been adjudged liable to the corporation, provided that a court shall have determined, upon application, that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

Section 102(b)(7) of the DGCL provides, generally, that our certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director to the corporation or its shareholders for monetary damages for breach of fiduciary duty as a director, provided that such provision may not eliminate or limit the liability of a director (i) for any breach of the director’s duty of loyalty to the corporation or its shareholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit. No such provision may eliminate or limit the liability of a director for any act or omission occurring prior to the date when such provision became effective.

The Certificate provides that the registrant will indemnify each person who was or is a party or threatened to be made a party to or is involved in 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 registrant) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at the registrant’s request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an “Indemnitee”), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the registrant’s best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful.

The Certificate provides that the registrant will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of the registrant to procure a judgment in the registrant’s favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at the registrant’s request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the registrant’s best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the registrant, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by the registrant against all expenses (including attorneys’ fees) actually and reasonably incurred by him or her or on his or her behalf in connection therewith. If the registrant does not assume the defense, expenses must be advanced to an Indemnitee under certain circumstances.

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

The registrant maintains a general liability insurance policy that covers certain liabilities of the directors and officers of the registrant arising out of claims based on acts or omissions in their capacities as directors or officers.

Item 7. Exemption for Registration Claimed.

Not applicable.

Item 8. Exhibits.

The following exhibits are incorporated herein by reference:

<u>Number</u>	<u>Description</u>
3.1	<u>Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K (File No. 001-40925), filed with the Securities and Exchange Commission on October 26, 2021)</u>
3.2	<u>Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.2 of the Company's Current Report on Form 8-K (File No. 001-40925), filed with the Securities and Exchange Commission on October 26, 2021)</u>
5.1*	<u>Opinion of Wilmer Cutler Pickering Hale and Dorr LLP, counsel to the Registrant</u>
23.1*	<u>Consent of Ernst & Young LLP, independent registered public accounting firm</u>
23.2*	<u>Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)</u>
24.1*	<u>Power of attorney (included on the signature pages of this registration statement)</u>
99.1	<u>2021 Stock Incentive Plan (incorporated by reference to Exhibit 10.5 to the Registrant's Registration Statement on Form S-1 (File No. 333-259973) filed with the Securities and Exchange Commission on October 18, 2021)</u>
99.2	<u>2021 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.8 to the Registrant's Registration Statement on Form S-1 (File No. 333-259973) filed with the Securities and Exchange Commission on October 18, 2021)</u>
99.3	<u>2022 Inducement Stock Incentive Plan (incorporated by reference to Exhibit 10.8 to the Registrant's Annual Report on Form 10-K (File No. 001-40925) filed with the Securities and Exchange Commission on March 2, 2023)</u>
107.1*	<u>Filing Fee Table</u>

* Filed herewith

Item 9. Undertakings

1. 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 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (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 (1)(i) and (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 therein, 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.
2. 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 therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
 3. 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 Securities and Exchange 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.
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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Waltham, Commonwealth of Massachusetts on this 2nd day of March, 2023.

XILIO THERAPEUTICS, INC.

By: /s/ René Russo
René Russo
Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Xilio Therapeutics, Inc., hereby severally constitute and appoint René Russo and Chris Frankenfield, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-8 filed herewith and any and all subsequent amendments to said registration statement, and generally to do all such things in our names and on our behalf in our capacities as officers and directors to enable Xilio Therapeutics, Inc. to comply with the provisions of the Securities Act of 1933, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said registration statement and any and all amendments thereto.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ René Russo</u> René Russo	Chief Executive Officer, Director (Principal Executive and Financial Officer)	March 2, 2023
<u>/s/ Brian King</u> Brian King	Controller (Controller)	March 2, 2023
<u>/s/ Paul J. Clancy</u> Paul J. Clancy	Chairman of the Board	March 2, 2023
<u>/s/ Sara M. Bonstein</u> Sara M. Bonstein	Director	March 2, 2023
<u>/s/ Daniel Curran</u> Daniel Curran	Director	March 2, 2023
<u>/s/ Tomas J. Heyman</u> Tomas J. Heyman	Director	March 2, 2023
<u>/s/ Robert Ross</u> Robert Ross	Director	March 2, 2023
<u>/s/ Christina Rossi</u> Christina Rossi	Director	March 2, 2023
<u>/s/ Yuan Xu</u> Yuan Xu	Director	March 2, 2023

March 2, 2023

Xilio Therapeutics, Inc.
828 Winter Street, Suite 300
Waltham, Massachusetts 02451

Re: Xilio Therapeutics, Inc. 2021 Stock Incentive Plan
Xilio Therapeutics, Inc. 2021 Employee Stock Purchase Plan
Xilio Therapeutics, Inc. 2022 Inducement Stock Incentive Plan

Ladies and Gentlemen:

We have assisted in the preparation of a Registration Statement on Form S-8 (the “Registration Statement”) to be filed with the Securities and Exchange Commission (the “Commission”) under the Securities Act of 1933, as amended (the “Securities Act”), relating to an aggregate of 1,923,296 shares of common stock, \$0.0001 par value per share (the “Shares”), of Xilio Therapeutics, Inc., a Delaware corporation (the “Company”), of which (i) 1,373,580 shares are issuable under the Company’s 2021 Stock Incentive Plan (the “SIP”), (ii) 274,716 shares are issuable under the Company’s 2021 Employee Stock Purchase Plan (the “ESPP”), and (iii) 275,000 shares are issuable under the Company’s 2022 Inducement Stock Incentive Plan (the “ISIP,” and together with the SIP and the ESPP, the “Plans”).

We have examined the Certificate of Incorporation and By-Laws of the Company, each as amended and restated to date, and originals, or copies certified to our satisfaction, of all pertinent records of the meetings of the board of directors and stockholders of the Company, the Registration Statement, the Plans and such other documents relating to the Company as we have deemed material for the purposes of this opinion.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, photostatic or other copies, the

Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109

Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Palo Alto San Francisco Washington

authenticity of the originals of any such documents and the legal competence of all signatories to such documents.

We assume that the appropriate action will be taken, prior to the offer and sale of the Shares in accordance with the Plans, to register and qualify the Shares for sale under all applicable state securities or “blue sky” laws.

We express no opinion herein as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware.

It is understood that this opinion is to be used only in connection with the offer and sale of the Shares while the Registration Statement is in effect.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized for issuance and, when the Shares are issued and paid for in accordance with the terms and conditions of the Plans, the Shares will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion with the Commission in connection with the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

/s/ Wilmer Cutler Pickering Hale and Dorr LLP
WILMER CUTLER PICKERING HALE AND
DORR LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2021 Stock Incentive Plan, 2021 Employee Stock Purchase Plan and 2022 Inducement Stock Incentive Plan of Xilio Therapeutics, Inc. of our report dated March 2, 2023, with respect to the consolidated financial statements of Xilio Therapeutics, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2022, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 2, 2023

Calculation of Filing Fee Tables

Form S-8
(Form Type)

Xilio Therapeutics, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1—Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock, \$0.0001 par value per share	Other	1,923,296 shares (2)	\$3.72 (3)	\$7,154,661.12 (3)	0.0001102	\$788.45
Total Offering Amounts					\$7,154,661.12		\$788.45
Total Fee Offsets							\$0
Net Fee Due							\$788.45

- (1) In accordance with Rule 416 under the Securities Act of 1933, as amended, this registration statement shall be deemed to cover any additional securities that may from time to time be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (2) Consists of 1,373,580 shares issuable under the Xilio Therapeutics, Inc. 2021 Stock Incentive Plan, 274,716 shares issuable under the Xilio Therapeutics, Inc. 2021 Employee Stock Purchase Plan, and 275,000 shares issuable under the Xilio Therapeutics, Inc. 2022 Inducement Stock Incentive Plan.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) of the Securities Act of 1933, as amended, and based upon the average of the high and low prices of the registrant's common stock as reported on the Nasdaq Global Select Market on February 28, 2023.
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