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

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No.)*

XILIO THERAPEUTICS, INC.
(Name of Issuer)

COMMON STOCK, \$0.0001 PAR VALUE
(Title of Class of Securities)

98422T100
(CUSIP Number)

OCTOBER 26, 2021
(Date of Event Which Requires Filing of This Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

| | |
|-----|--|
| 1. | Name of Reporting Persons Atlas Venture Fund XI, L.P. |
| 2. | Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3. | SEC USE ONLY |
| 4. | Citizenship or Place of Organization Delaware |
| | 5. Sole Voting Power 0 |
| | 6. Shared Voting Power 2,023,402 ¹ |
| | 7. Sole Dispositive Power 0 |
| | 8. Shared Dispositive Power 2,023,402 ¹ |
| 9. | Aggregate Amount Beneficially Owned by Each Reporting Person 2,023,402 ¹ |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row (9) 7.6% ² |
| 12. | Type of Reporting Person (See Instructions) PN |

(1) As described in Item 4 below, Atlas Venture Fund XI, L.P., a Delaware limited partnership (“Atlas XI”), Atlas Venture Associates XI, L.P., a Delaware limited partnership (“AVA XI LP”) and Atlas Venture Associates XI, LLC, a Delaware limited liability company (“AVA XI LLC” and together with Atlas XI and AVA XI LP, the “Fund XI Reporting Persons”) beneficially own 2,023,402 shares of the Issuer’s Common Stock. All of these shares are directly held by Atlas XI. AVA XI LP is the general partner of Atlas XI and AVA XI LLC is the general partner of AVA XI LP. Each of AVA XI LP and AVA XI LLC has voting and dispositive power over the shares held by Atlas XI. As such, each of the Fund XI Reporting Persons share voting and dispositive power with respect to the shares held by Atlas XI.

(2) This percentage is calculated based upon 26,666,008 outstanding shares of Common Stock of the Issuer as of October 26, 2021 (the anticipated closing of the Issuer’s initial public offering), as reported in the Issuer’s prospectus and filed with the Securities and Exchange Commission on October 22, 2021.

| | |
|-----|--|
| 1. | Name of Reporting Persons Atlas Venture Associates XI, L.P. |
| 2. | Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3. | SEC USE ONLY |
| 4. | Citizenship or Place of Organization Delaware |
| | 5. Sole Voting Power 0 |
| | 6. Shared Voting Power 2,023,402 ¹ |
| | 7. Sole Dispositive Power 0 |
| | 8. Shared Dispositive Power 2,023,402 ¹ |
| 9. | Aggregate Amount Beneficially Owned by Each Reporting Person 2,023,402 ¹ |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row (9) 7.6% ² |
| 12. | Type of Reporting Person (See Instructions) PN |

(1) As described in Item 4 below, Atlas Venture Fund XI, L.P., a Delaware limited partnership (“Atlas XI”), Atlas Venture Associates XI, L.P., a Delaware limited partnership (“AVA XI LP”) and Atlas Venture Associates XI, LLC, a Delaware limited liability company (“AVA XI LLC” and together with Atlas XI and AVA XI LP, the “Fund XI Reporting Persons”) beneficially own 2,023,402 shares of the Issuer’s Common Stock. All of these shares are directly held by Atlas XI. AVA XI LP is the general partner of Atlas XI and AVA XI LLC is the general partner of AVA XI LP. Each of AVA XI LP and AVA XI LLC has voting and dispositive power over the shares held by Atlas XI. As such, each of the Fund XI Reporting Persons share voting and dispositive power with respect to the shares held by Atlas XI.

(2) This percentage is calculated based upon 26,666,008 outstanding shares of Common Stock of the Issuer as of October 26, 2021 (the anticipated closing of the Issuer’s initial public offering), as reported in the Issuer’s prospectus and filed with the Securities and Exchange Commission on October 22, 2021.

| | |
|-----|--|
| 1. | Name of Reporting Persons Atlas Venture Associates XI, LLC |
| 2. | Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3. | SEC USE ONLY |
| 4. | Citizenship or Place of Organization Delaware |
| | 5. Sole Voting Power 0 |
| | 6. Shared Voting Power 2,023,402 ¹ |
| | 7. Sole Dispositive Power 0 |
| | 8. Shared Dispositive Power 2,023,402 ¹ |
| 9. | Aggregate Amount Beneficially Owned by Each Reporting Person 2,023,402 ¹ |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row (9) 7.6% ² |
| 12. | Type of Reporting Person (See Instructions) OO |

(1) As described in Item 4 below, Atlas Venture Fund XI, L.P., a Delaware limited partnership ("Atlas XI"), Atlas Venture Associates XI, L.P., a Delaware limited partnership ("AVA XI LP") and Atlas Venture Associates XI, LLC, a Delaware limited liability company ("AVA XI LLC" and together with Atlas XI and AVA XI LP, the "Fund XI Reporting Persons") beneficially own 2,023,402 shares of the Issuer's Common Stock. All of these shares are directly held by Atlas XI. AVA XI LP is the general partner of Atlas XI and AVA XI LLC is the general partner of AVA XI LP. Each of AVA XI LP and AVA XI LLC has voting and dispositive power over the shares held by Atlas XI. As such, each of the Fund XI Reporting Persons share voting and dispositive power with respect to the shares held by Atlas XI.

(2) This percentage is calculated based upon 26,666,008 outstanding shares of Common Stock of the Issuer as of October 26, 2021 (the anticipated closing of the Issuer's initial public offering), as reported in the Issuer's prospectus and filed with the Securities and Exchange Commission on October 22, 2021.

| | |
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| 1. | Name of Reporting Persons Atlas Venture Opportunity Fund I, L.P. |
| 2. | Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3. | SEC USE ONLY |
| 4. | Citizenship or Place of Organization Delaware |
| | 5. Sole Voting Power 0 |
| | 6. Shared Voting Power 735,942 ¹ |
| | 7. Sole Dispositive Power 0 |
| | 8. Shared Dispositive Power 735,942 ¹ |
| 9. | Aggregate Amount Beneficially Owned by Each Reporting Person 735,942 ¹ |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row (9) 2.8% ² |
| 12. | Type of Reporting Person (See Instructions) PN |

(1) As described in Item 4 below, Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership (“AVO I”), Atlas Venture Associates Opportunity I, L.P., a Delaware limited partnership (“AVAO LP”) and Atlas Venture Associates Opportunity I, LLC, a Delaware limited liability company (“AVAO LLC” and together with AVO I and AVAO LP, the “Opportunity Fund Reporting Persons”) beneficially own 735,942 shares of the Issuer’s Common Stock. All of these shares are directly held by AVO I. AVAO LP is the general partner of AVO I and AVAO LLC is the general partner of AVAO LP. Each of AVAO LP and AVAO LLC has voting and dispositive power over the shares held by AVO I. As such, each of the Opportunity Fund Reporting Persons share voting and dispositive power with respect to the shares held by AVO I.

(2) This percentage is calculated based upon 26,666,008 outstanding shares of Common Stock of the Issuer as of October 26, 2021 (the anticipated closing of the Issuer’s initial public offering), as reported in the Issuer’s prospectus and filed with the Securities and Exchange Commission on October 22, 2021.

| | |
|-----|--|
| 1. | Name of Reporting Persons Atlas Venture Associates Opportunity I, L.P. |
| 2. | Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3. | SEC USE ONLY |
| 4. | Citizenship or Place of Organization Delaware |
| | 5. Sole Voting Power 0 |
| | 6. Shared Voting Power 735,942 ¹ |
| | 7. Sole Dispositive Power 0 |
| | 8. Shared Dispositive Power 735,942 ¹ |
| 9. | Aggregate Amount Beneficially Owned by Each Reporting Person 735,942 ¹ |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row (9) 2.8% ² |
| 12. | Type of Reporting Person (See Instructions) PN |

(1) As described in Item 4 below, Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership (“AVO I”), Atlas Venture Associates Opportunity I, L.P., a Delaware limited partnership (“AVAO LP”) and Atlas Venture Associates Opportunity I, LLC, a Delaware limited liability company (“AVAO LLC” and together with AVO I and AVAO LP, the “Opportunity Fund Reporting Persons”) beneficially own 735,942 shares of the Issuer’s Common Stock. All of these shares are directly held by AVO I. AVAO LP is the general partner of AVO I and AVAO LLC is the general partner of AVAO LP. Each of AVAO LP and AVAO LLC has voting and dispositive power over the shares held by AVO I. As such, each of the Opportunity Fund Reporting Persons share voting and dispositive power with respect to the shares held by AVO I.

(2) This percentage is calculated based upon 26,666,008 outstanding shares of Common Stock of the Issuer as of October 26, 2021 (the anticipated closing of the Issuer’s initial public offering), as reported in the Issuer’s prospectus and filed with the Securities and Exchange Commission on October 22, 2021.

| | |
|---|---|
| 1. Name of Reporting Persons Atlas Venture Associates Opportunity I, LLC | |
| 2. Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> | |
| 3. SEC USE ONLY | |
| 4. Citizenship or Place of Organization Delaware | |
| Number of Shares Beneficially Owned by Each Reporting Person With: | 5. Sole Voting Power 0 |
| | 6. Shared Voting Power 735,942 ¹ |
| | 7. Sole Dispositive Power 0 |
| | 8. Shared Dispositive Power 735,942 ¹ |
| 9. Aggregate Amount Beneficially Owned by Each Reporting Person 735,942 ¹ | |
| 10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/> | |
| 11. Percent of Class Represented by Amount in Row (9) 2.8% ² | |
| 12. Type of Reporting Person (See Instructions) OO | |

(1) As described in Item 4 below, Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership ("AVO I"), Atlas Venture Associates Opportunity I, L.P., a Delaware limited partnership ("AVAO LP") and Atlas Venture Associates Opportunity I, LLC, a Delaware limited liability company ("AVAO LLC" and together with AVO I and AVAO LP, the "Opportunity Fund Reporting Persons") beneficially own 735,942 shares of the Issuer's Common Stock. All of these shares are directly held by AVO I. AVAO LP is the general partner of AVO I and AVAO LLC is the general partner of AVAO LP. Each of AVAO LP and AVAO LLC has voting and dispositive power over the shares held by AVO I. As such, each of the Opportunity Fund Reporting Persons share voting and dispositive power with respect to the shares held by AVO I.

(2) This percentage is calculated based upon 26,666,008 outstanding shares of Common Stock of the Issuer as of October 26, 2021 (the anticipated closing of the Issuer's initial public offering), as reported in the Issuer's prospectus and filed with the Securities and Exchange Commission on October 22, 2021.

Item 1(a) Name of Issuer

Xilio Therapeutics, Inc. (the "Issuer")

Item 1(b) Address of Issuer's Principal Executive Offices828 Winter Street, Suite 300
Waltham, MA 02451Item 2(a) Name of Person Filing

This Schedule 13G is filed by (i) Atlas Venture Fund XI, L.P., a Delaware limited partnership ("Atlas XI"), (ii) Atlas Venture Associates XI, L.P., a Delaware limited partnership ("AVA XI LP"), (iii) Atlas Venture Associates XI, LLC, a Delaware limited liability company ("AVA XI LLC" and together with Atlas XI and AVA XI LP, the "Fund XI Reporting Persons"), (iv) Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership ("AVO I"), (v) Atlas Venture Associates Opportunity I, L.P., a Delaware limited partnership ("AVAO LP") and (vi) Atlas Venture Associates Opportunity I, LLC, a Delaware limited liability company ("AVAO LLC" and together with AVO I and AVAO LP, the "Opportunity Fund Reporting Persons" and together with the Fund XI Reporting Persons, the "Reporting Persons").

Item 2(b) Address of Principal Business Office or, if none, Residence300 Technology Square, 8th Floor
Cambridge, Massachusetts 02139Item 2(c) Citizenship

Each of Atlas XI, AVA XI LP, AVO I and AVAO LP is a Delaware limited partnership. Each of AVA XI LLC and AVAO LLC is a Delaware limited liability company.

Item 2(d) Title of Class of Securities

Common Stock, \$0.0001 par value per share

Item 2(e) CUSIP Number

98422T100

Item 3

Not applicable.

Item 4 Ownership

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1

(a) Amount beneficially owned: Atlas XI is the record owner of 2,023,402 shares of Common Stock. AVA XI LP is the general partner of Atlas XI and AVA XI LLC is the general partner of AVA XI LP. Each of Atlas XI, AVA XI LP and AVA XI LLC has shared voting and dispositive power over the shares held by Atlas XI. As such, each of Atlas XI, AVA XI LP and AVA XI LLC may be deemed to beneficially own the shares held by Atlas XI.

Amount beneficially owned: AVO I is the record owner of 735,942 shares of Common Stock. AVAO LP is the general partner of AVO I and AVAO LLC is the general partner of AVAO LP. Each of AVO I, AVAO LP and

AVAO LLC has shared voting and dispositive power over the shares held by AVO I. As such, each of AVO I, AVAO LP and AVAO LLC may be deemed to beneficially own the shares held by AVO I.

(b) Percent of class: Fund XI Reporting Persons and Opportunity Fund Reporting Persons may be deemed to beneficially own 7.6% and 2.8%, respectively, of the Issuer's outstanding Common Stock, which percentages are calculated based upon 26,666,008 outstanding shares of Common Stock of the Issuer as of October 26, 2021 (the anticipated closing of the Issuer's initial public offering), as reported in the Issuer's prospectus and filed with the Securities and Exchange Commission on October 22, 2021. Collectively, the Reporting Persons beneficially own an aggregate of 2,759,344 shares of Common Stock, which represents 10.3% of the Issuer's outstanding Common Stock. The Fund XI Reporting Persons and the Opportunity Fund Reporting Persons are under common control and as a result, the Reporting Persons may be deemed to be members of a group. However, the Reporting Persons disclaim such group membership, and this Schedule 13G shall not be deemed an admission that the Reporting Persons are members of a group for purposes of Section 13 or for any other purposes.

(c) Number of shares as to which the person has:

(i) Sole power to vote or to direct the vote: None of the Reporting Persons have the sole power to direct the vote of the Common Stock.

(ii) Shared power to vote or to direct the vote: Each Fund XI Reporting Person shares power to vote or direct the vote of 2,023,402 shares of Common Stock and each Opportunity Fund Reporting Person shares power to vote or direct the vote of 735,942 shares of Common Stock.

(iii) Sole power to dispose or to direct the disposition of: None of the Reporting Persons have the sole power to dispose or to direct the disposition of the Common Stock.

(iv) Shared power to dispose or to direct the disposition of: Each Fund XI Reporting Person shares power to dispose or to direct the disposition of 2,023,402 shares of Common Stock and each Opportunity Fund Reporting Person shares power to dispose or to direct the disposition of 735,942 shares of Common Stock.

Item 5 Ownership of Five Percent or Less of a Class

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following.

Item 6 Ownership of More than Five Percent of Another Person

Not applicable.

Item 7 Identification and Classification of the Subsidiary which Acquired the Security Being Reported on by the Parent Holding Company

Not applicable.

Item 8 Identification and Classification of Members of the Group

Not applicable.

Item 9 Notice of Dissolution of Group

Not applicable.

Item 10 Certification

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect, other than activities solely in connection with a nomination under § 240.14a-11.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: November 5, 2021

ATLAS VENTURE FUND XI, L.P.

By: Atlas Venture Associates XI, L.P., its general partner

By: Atlas Venture Associates XI, LLC, its general partner

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

ATLAS VENTURE ASSOCIATES XI, L.P.

By: Atlas Venture Associates XI, LLC, its general partner

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

ATLAS VENTURE ASSOCIATES XI, LLC

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

ATLAS VENTURE OPPORTUNITY FUND I, L.P.

By: Atlas Venture Associates Opportunity I, L.P., its general partner

By: Atlas Venture Associates XI, LLC, its general partner

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

ATLAS VENTURE ASSOCIATES OPPORTUNITY I, L.P.

By: Atlas Venture Associates Opportunity I, LLC, its general partner

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

ATLAS VENTURE ASSOCIATES OPPORTUNITY I, LLC

By: /s/ Ommer Chohan

Name: Ommer Chohan

Title: CFO

EXHIBITS

A: Joint Filing Agreement



Exhibit A

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, the undersigned agree to the joint filing on behalf of each of them of a statement on Schedule 13G (including amendments thereto) with respect to the Common Stock of Xilio Therapeutics, Inc. and further agree that this agreement be included as an exhibit to such filing. Each party to the agreement expressly authorizes each other party to file on its behalf any and all amendments to such statement. Each party to this agreement agrees that this joint filing agreement may be signed in counterparts.

IN WITNESS WHEREOF, the undersigned have executed this Joint Filing Agreement as of November 5, 2021.

ATLAS VENTURE FUND XI, L.P.

By: Atlas Venture Associates XI, L.P., its general partner
By: Atlas Venture Associates XI, LLC, its general partner

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: CFO

ATLAS VENTURE ASSOCIATES XI, L.P.

By: Atlas Venture Associates XI, LLC, its general partner

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: CFO

ATLAS VENTURE ASSOCIATES XI, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: CFO

ATLAS VENTURE OPPORTUNITY FUND I, L.P.

By: Atlas Venture Associates Opportunity I, L.P., its general partner
By: Atlas Venture Associates XI, LLC, its general partner

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: CFO

ATLAS VENTURE ASSOCIATES OPPORTUNITY I, L.P.

By: Atlas Venture Associates Opportunity I, LLC, its general partner

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: CFO

ATLAS VENTURE ASSOCIATES OPPORTUNITY I, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: CFO
