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

SCHEDULE 13D
Under the Securities Exchange Act of 1934
(Amendment No.)*

Q32 Bio Inc.
(Name of Issuer)

Common Stock, par value \$0.0001 per share
(Title of Class of Securities)

746964105
(CUSIP Number)

Atlas Venture
Attention: Ommer Chohan, Chief Financial Officer
300 Technology Square, 8th Floor
Cambridge, MA 02139
(857) 201-2700

(Name, Address and Telephone Number of Person Authorized to
Receive Notices and Communications)

March 25, 2024
(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §240.13d-7 for other parties to whom copies are to be sent.

* 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 disclosures provided in a prior cover page.

The information required on 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	NAMES OF REPORTING PERSONS: ATLAS VENTURE FUND X, 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): WC
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 864,261 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 864,261 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 864,261 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 7.2% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): PN

- As described in Item 5 below, Atlas Venture Fund X, L.P., a Delaware limited partnership ("Atlas X"), Atlas Venture Associates X, L.P., a Delaware limited partnership ("AVA X LP") and Atlas Venture Associates X, LLC, a Delaware limited liability company ("AVA X LLC" and together with Atlas X and AVA X LP, the "Fund X Reporting Persons") beneficially own the 864,261 shares of the Issuer's Common Stock that are directly held by Atlas X. AVA X LP is the general partner of Atlas X and AVA X LLC is the general partner of AVA X LP. Each of AVA X LP and AVA X LLC has voting and dispositive power over the shares held by Atlas X. As such, each of the Fund X Reporting Persons share voting and dispositive power with respect to the shares held by Atlas X.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the Securities and Exchange Commission (the "SEC") on March 27, 2024.

1	NAMES OF REPORTING PERSONS: ATLAS VENTURE ASSOCIATES X, 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): AF
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 864,261 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 864,261 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 864,261 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 7.2% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): PN

- As described in Item 5 below, Atlas Venture Fund X, L.P., a Delaware limited partnership ("Atlas X"), Atlas Venture Associates X, L.P., a Delaware limited partnership ("AVA X LP") and Atlas Venture Associates X, LLC, a Delaware limited liability company ("AVA X LLC" and together with Atlas X and AVA X LP, the "Fund X Reporting Persons") beneficially own the 864,261 shares of the Issuer's Common Stock that are directly held by Atlas X. AVA X LP is the general partner of Atlas X and AVA X LLC is the general partner of AVA X LP. Each of AVA X LP and AVA X LLC has voting and dispositive power over the shares held by Atlas X. As such, each of the Fund X Reporting Persons share voting and dispositive power with respect to the shares held by Atlas X.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the SEC on March 27, 2024.

1	NAMES OF REPORTING PERSONS: ATLAS VENTURE ASSOCIATES X, 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): AF
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 864,261 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 864,261 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 864,261 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 7.2% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): OO

- As described in Item 5 below, Atlas Venture Fund X, L.P., a Delaware limited partnership ("Atlas X"), Atlas Venture Associates X, L.P., a Delaware limited partnership ("AVA X LP") and Atlas Venture Associates X, LLC, a Delaware limited liability company ("AVA X LLC" and together with Atlas X and AVA X LP, the "Fund X Reporting Persons") beneficially own the 864,261 shares of the Issuer's Common Stock that are directly held by Atlas X. AVA X LP is the general partner of Atlas X and AVA X LLC is the general partner of AVA X LP. Each of AVA X LP and AVA X LLC has voting and dispositive power over the shares held by Atlas X. As such, each of the Fund X Reporting Persons share voting and dispositive power with respect to the shares held by Atlas X.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the SEC on March 27, 2024.

1	NAMES 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): WC
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 503,296 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 503,296 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 503,296 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 4.2% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): PN

- As described in Item 5 below, Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership (“AVOF”), 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 AVOF and AVAO LP, the “Opportunity Fund Reporting Persons”) beneficially own 503,296 shares of the Issuer’s Common Stock. All of these shares are held by AVOF. AVAO LP is the general partner of AVOF 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 AVOF. As such, each of the Opportunity Fund Reporting Persons share voting and dispositive power with respect to the shares held by AVOF.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer’s Current Report on Form 8-K filed with the SEC on March 27, 2024.

1	NAMES 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): AF
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 503,296 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 503,296 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 503,296 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 4.2% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): PN

- As described in Item 5 below, Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership (“AVOF”), 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 AVOF and AVAO LP, the “Opportunity Fund Reporting Persons”) beneficially own 503,296 shares of the Issuer’s Common Stock. All of these shares are held by AVOF. AVAO LP is the general partner of AVOF 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 AVOF. As such, each of the Opportunity Fund Reporting Persons share voting and dispositive power with respect to the shares held by AVOF.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer’s Current Report on Form 8-K filed with the SEC on March 27, 2024.

1	NAMES 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): AF
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 503,296 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 503,296 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 503,296 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 4.2% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): OO

- As described in Item 5 below, Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership (“AVOF”), 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 AVOF and AVAO LP, the “Opportunity Fund Reporting Persons”) beneficially own 503,296 shares of the Issuer’s Common Stock. All of these shares are held by AVOF. AVAO LP is the general partner of AVOF 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 AVOF. As such, each of the Opportunity Fund Reporting Persons share voting and dispositive power with respect to the shares held by AVOF.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer’s Current Report on Form 8-K filed with the SEC on March 27, 2024.

1	NAMES OF REPORTING PERSONS: ATLAS VENTURE OPPORTUNITY FUND II, 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): WC
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 724,549 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 724,549 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 724,549 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 6.1% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): PN

- As described in Item 5 below, Atlas Venture Opportunity Fund II, L.P., a Delaware limited partnership ("AVOF II"), Atlas Venture Associates Opportunity II, L.P., a Delaware limited partnership ("AVAO II LP") and Atlas Venture Associates Opportunity II, LLC, a Delaware limited liability company ("AVAO II LLC" and together with AVOF II and AVAO II LP, the "Opportunity Fund II Reporting Persons") beneficially own 724,549 shares of the Issuer's Common Stock. All of these shares are held by AVOF II. AVAO II LP is the general partner of AVOF II and AVAO II LLC is the general partner of AVAO II LP. Each of AVAO II LP and AVAO II LLC has voting and dispositive power over the shares held by AVOF II. As such, each of the Opportunity Fund II Reporting Persons share voting and dispositive power with respect to the shares held by AVOF II.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the SEC on March 27, 2024.

1	NAMES OF REPORTING PERSONS: ATLAS VENTURE ASSOCIATES OPPORTUNITY II, 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): AF
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 724,549 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 724,549 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 724,549 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 6.1% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): PN

- As described in Item 5 below, Atlas Venture Opportunity Fund II, L.P., a Delaware limited partnership ("AVOF II"), Atlas Venture Associates Opportunity II, L.P., a Delaware limited partnership ("AVAO II LP") and Atlas Venture Associates Opportunity II, LLC, a Delaware limited liability company ("AVAO II LLC" and together with AVOF II and AVAO II LP, the "Opportunity Fund II Reporting Persons") beneficially own 724,549 shares of the Issuer's Common Stock. All of these shares are held by AVOF II. AVAO II LP is the general partner of AVOF II and AVAO II LLC is the general partner of AVAO II LP. Each of AVAO II LP and AVAO II LLC has voting and dispositive power over the shares held by AVOF II. As such, each of the Opportunity Fund II Reporting Persons share voting and dispositive power with respect to the shares held by AVOF II.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the SEC on March 27, 2024.

1	NAMES OF REPORTING PERSONS: ATLAS VENTURE ASSOCIATES OPPORTUNITY II, 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	SOURCE OF FUNDS (SEE INSTRUCTIONS): AF
5	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e): <input type="checkbox"/>
6	CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7 SOLE VOTING POWER: 0
	8 SHARED VOTING POWER: 724,549 (1)
	9 SOLE DISPOSITIVE POWER: 0
	10 SHARED DISPOSITIVE POWER: 724,549 (1)
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 724,549 (1)
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS): <input type="checkbox"/>
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 6.1% (2)
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS): OO

- As described in Item 5 below, Atlas Venture Opportunity Fund II, L.P., a Delaware limited partnership ("AVOF II"), Atlas Venture Associates Opportunity II, L.P., a Delaware limited partnership ("AVAO II LP") and Atlas Venture Associates Opportunity II, LLC, a Delaware limited liability company ("AVAO II LLC" and together with AVOF II and AVAO II LP, the "Opportunity Fund II Reporting Persons") beneficially own 724,549 shares of the Issuer's Common Stock. All of these shares are held by AVOF II. AVAO II LP is the general partner of AVOF II and AVAO II LLC is the general partner of AVAO II LP. Each of AVAO II LP and AVAO II LLC has voting and dispositive power over the shares held by AVOF II. As such, each of the Opportunity Fund II Reporting Persons share voting and dispositive power with respect to the shares held by AVOF II.
- This percentage is calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the SEC on March 27, 2024.

Item 1. Security and Issuer

The class of equity securities to which this Schedule 13D relates is common stock, par value \$0.0001 per share (the “Common Stock”) of Q32 Bio Inc. (f/k/a Homology Medicines, Inc.), a Delaware corporation (the “Issuer” or “Q32”). The principal executive offices of the Issuer are located at 830 Winter Street, Waltham, MA 02451.

Item 2. Identity and Background

- (a) This Schedule 13D is filed by (i) Atlas Venture Fund X, L.P., a Delaware limited partnership (“Atlas X”), (ii) Atlas Venture Associates X, L.P., a Delaware limited partnership (“AVA X LP”), (iii) Atlas Venture Associates X, LLC, a Delaware limited liability company (“AVA X LLC” and together with Atlas X and AVA X LP, the “Fund X Reporting Persons”), (iv) Atlas Venture Opportunity Fund I, L.P., a Delaware limited partnership (“AVOF”), (v) Atlas Venture Associates Opportunity I, L.P., a Delaware limited partnership (“AVAO LP”), (vi) Atlas Venture Associates Opportunity I, LLC, a Delaware limited liability company (“AVAO LLC” and together with AVOF and AVAO LP, the “Opportunity Fund Reporting Persons”), (vii) Atlas Venture Opportunity Fund II, L.P., a Delaware limited partnership (“AVOF II”), (viii) Atlas Venture Associates Opportunity II, L.P., a Delaware limited partnership (“AVAO II LP”) and (ix) Atlas Venture Associates Opportunity II, LLC, a Delaware limited liability company (“AVAO II LLC” and together with AVOF II and AVAO II LP, the “Opportunity Fund II Reporting Persons” and together with the Fund X Reporting Persons and the Opportunity Fund Reporting Persons, the “Reporting Persons”).
- (b) The address of the principal place of business of each of the Reporting Persons is c/o 300 Technology Square, 8th Floor, Cambridge, Massachusetts 02139.
- (c) The principal business of each of the Reporting Persons is the venture capital investment business.
- (d) During the last five years, none of the Reporting Persons has been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) During the last five years, none of the Reporting Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.
- (f) Each of Atlas X, AVA X LP, AVOF, AVAO LP, AVOF II and AVAO II LP is a Delaware limited partnership. Each of AVA X LLC, AVAO LLC and AVAO II LLC is a Delaware limited liability company.

Item 3. Source and Amount of Funds or Other Consideration

Between August 15, 2017 and December 23, 2022, Atlas X, AVOF and AVOF II purchased (i) 800,000 shares of common stock, (ii) 5,200,000 shares of Series A-1 Preferred Stock, (iii) 12,000,000 shares of Series A Preferred Stock, (iv) 10,482,180 shares of Series B Preferred Stock and (v) convertible promissory notes of Legacy Q32 (as defined below) at an aggregate purchase price of \$34,413,924.

On November 16, 2023, in connection with the Merger Agreement (as defined below), AVOF II and other unrelated investors entered into a subscription agreement with Legacy Q32 (the “Subscription Agreement”), pursuant to which AVOF II purchased 394,674 shares of common stock of Legacy Q32 at a purchase price of approximately \$1.1989 per share (the “Pre-Closing Financing”). On March 25, 2024, the Pre-Closing Financing closed immediately prior to the effective time of the Merger.

On March 25, 2024, the Issuer completed the transactions contemplated by the Agreement and Plan of Merger, dated as of November 16, 2023, (the “Merger Agreement”), by and among the Issuer, Q32 Bio Operations Inc. (formerly known as Q32 Bio Inc.), a Delaware corporation (“Legacy Q32”) and Kenobi Merger Sub, Inc., a Delaware corporation, and a wholly owned subsidiary of the Issuer (“Merger Sub”), pursuant to which, among other matters, Merger Sub merged with and into Legacy Q32, with Legacy Q32 continuing as a wholly owned subsidiary of the Issuer and the surviving corporation of the merger (the “Merger”). In connection with the closing of the Merger, the Issuer changed its name to Q32 Bio Inc.

Immediately prior to the effective time of the Merger, each share of Legacy Q32's preferred stock was converted into one share of Legacy Q32's common stock and the convertible promissory notes converted into an aggregate of 6,870,252 shares of Legacy Q32's common stock. At the effective time of the Merger, each of these shares was converted into the right to receive 0.0480 shares of the Issuer's Common Stock, after giving effect to a 1-for-18 reverse split of the Issuer's Common Stock.

Following the closing of the Merger, Atlas X, AVOF and AVOF II owned 864,261, 503,296 and 724,549 shares of Common Stock, respectively.

The source of funds for Atlas X's, AVOF's and AVOF II's purchases of shares of Legacy Q32's common and preferred stock was the respective contributions from each of Atlas X's, AVOF's and AVOF II's general and limited partners.

Item 4. Purpose of Transaction

The Reporting Persons purchased the aforementioned securities for investment purposes with the aim of increasing the value of their investments and the Issuer. Subject to applicable legal requirements, one or more of the Reporting Persons may purchase additional securities of the Issuer from time to time in open market or private transactions, depending on its evaluation of the Issuer's business, prospects and financial condition, the market for the Issuer's securities, other developments concerning the Issuer, the reaction of the Issuer to the Reporting Persons' ownership of the Issuer's securities, other opportunities available to the Reporting Persons, and general economic, money market and stock market conditions. In addition, depending upon the factors referred to above, the Reporting Persons may dispose of all or a portion of their securities of the Issuer at any time. Each of the Reporting Persons reserve the right to increase or decrease its holdings on such terms and at such times as each may decide.

Except as set forth in this Item 4 and Item 6 below, none of the Reporting Persons have a present plan or proposal that relates to or would result in any of the actions specified in clauses (a) through (j) of Item 4 of Schedule 13D of the Securities Exchange Act of 1934 (the "Act"). However, each of the Reporting Persons reserves the right to propose or participate in future transactions which may result in one or more of such actions, including but not limited to, an extraordinary corporate transaction, such as a merger, reorganization or liquidation, sale of a material amount of assets of the Issuer or its subsidiaries, or other transactions which might have the effect of causing the Common Stock to become eligible for termination of registration under Section 12(g) of the Act. The Reporting Persons also retain the right to change their investment intent at any time, to acquire additional shares of Common Stock or other securities of the Issuer from time to time, or to sell, distribute or otherwise dispose of all or part of the Common Stock beneficially owned by them in any manner permitted by law (including pursuant to a sale or distribution plan adopted pursuant to Rule 10b5-1 under the Act). The Reporting Persons may engage from time to time in ordinary course transactions with financial institutions with respect to the securities described herein.

David S. Grayzel, a member of each of AVA X LLC, AVOA LLC and AVOA II LLC, is a member of the board of directors of the Issuer. As a director of the Issuer, Mr. Grayzel may have influence over the corporate activities of the Issuer, including activities which may relate to the transactions described in clauses (a) through (j) of Item 4 of Schedule 13D.

Item 5. Interest in Securities of the Issuer

(a)(b) As of the date hereof, Atlas X is the record owner of 864,261 shares of Common Stock. AVA X LP is the general partner of Atlas X and AVA X LLC is the general partner of AVA X LP. Each of Atlas X, AVA X LP and AVA X LLC has shared voting and dispositive power over the shares held by Atlas X. As such, each of Atlas X, AVA X LP and AVA X LLC may be deemed to beneficially own the shares held by Atlas X.

As of the date hereof, AVOF is the record owner of 503,296 shares of Common Stock. AVAO LP is the general partner of AVOF and AVAO LLC is the general partner of AVAO LP. Each of AVOF, AVAO LP and AVAO LLC has shared voting and dispositive power over the shares held by AVOF. As such, each of AVOF, AVAO LP and AVAO LLC may be deemed to beneficially own the shares held by AVOF.

As of the date hereof, AVOF II is the record owner of 724,549 shares of Common Stock. AVAO II LP is the general partner of AVOF II and AVAO II LLC is the general partner of AVAO II LP. Each of AVOF II, AVAO II LP and AVAO II LLC has shared voting and dispositive power over the shares held by AVOF II. As such, each of AVOF II, AVAO II LP and AVAO II LLC may be deemed to beneficially own the shares held by AVOF II.

Each of the Fund X Reporting Persons, the Opportunity Fund Reporting Persons and the Opportunity Fund II Reporting Persons may be deemed to beneficially own 7.2%, 4.2% and 6.1%, respectively, of the Issuer's outstanding Common Stock, which percentages are calculated based upon 11,929,528 shares of Common Stock outstanding as of March 25, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the SEC on March 27, 2024.

Collectively, the Reporting Persons beneficially own an aggregate of 2,092,106 shares of Common Stock, which represents an estimated 17.5% of the Issuer's outstanding Common Stock. The Fund X Reporting Persons, the Opportunity Fund Reporting Persons and the Opportunity Fund II 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 13D 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) Except as set forth herein, none of the Reporting Persons has effected any transactions in shares of the Issuer's Common Stock during the last 60 days.
- (d) No other person is known by the Reporting Persons to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of Common Stock beneficially owned by the Reporting Persons.
- (e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

Registration Rights Agreement

Pursuant to the Subscription Agreement, on March 25, 2024, the Issuer and the investors in the Pre-Closing Financing, including AVOF II, entered into a registration rights agreement (the "Registration Rights Agreement"). Pursuant to the Registration Rights Agreement, among other things, the Issuer agreed to register for resale certain shares of its Common Stock held by such investors, including shares issued in the Merger in exchange for the shares of Legacy Q32 common stock issued in the Pre-Closing Financing.

Pursuant to the Registration Rights Agreement, the Issuer is obligated to prepare and file a shelf registration statement covering the resale of covered Shares within 45 calendar days following the closing of the Merger, subject to certain exceptions, pursuant to Rule 415 of the Securities Act of 1933, as amended (the "Securities Act"). The Issuer also agreed to use its reasonable best efforts to keep such registration statement continuously effective under the Securities Act until the earlier of the date that all registrable securities covered by such registration statement (i) have been sold, thereunder or pursuant to Rule 144 of the Securities Act or (ii) may be sold without volume or manner-of-sale restrictions pursuant to Rule 144 of the Securities Act and without the requirement for the Issuer to be in compliance with the current public information requirement under Rule 144 of the Securities Act. The Registration Rights Agreement also provides that the Issuer will pay certain expenses of the securityholders and indemnify the applicable securityholders against certain liabilities.

The foregoing description is qualified in its entirety by the full text of the Registration Rights Agreement, a copy of which is filed herewith as Exhibit B and incorporated herein by reference.

Lock-Up Agreement

In connection with the closing of the Merger, the Issuer entered into lock-up agreements with certain of its stockholders, directors and executive officers, including Atlas X and AVOF, which restrict the transfer of Shares owned by such persons for a period of 180 days following the closing date of the Merger, subject to certain limited exceptions.

The foregoing description is qualified in its entirety by the full text of the Form of Lock-Up Agreement, a copy of which is filed herewith as Exhibit C and incorporated herein by reference.

Item 7. Material to be Filed as Exhibits

- A. [Joint Filing Agreement as required by Rule 13d-1\(k\)\(1\) under the Securities Exchange Act of 1934, as amended.](#)
 - B. [Registration Rights Agreement, dated March 25, 2024, by and among Q32 Bio Operations Inc. \(formerly Q32 Bio Inc.\) and certain parties thereto \(incorporated by reference to Exhibit 10.2 to the Issuer's Form 8-K \(File No. 001-38433\) filed with the SEC on March 27, 2024\).](#)
 - C. [Form of Lock-Up Agreement \(incorporated by reference to Exhibit 10.3 to the Issuer's Form 8-K \(File No. 001-38433\) filed with the SEC on March 27, 2024\).](#)
-

SIGNATURES

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: April 1, 2024

ATLAS VENTURE FUND X, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES X, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES X, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE OPPORTUNITY FUND I, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

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: Chief Financial Officer

ATLAS VENTURE ASSOCIATES OPPORTUNITY I, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE OPPORTUNITY FUND II, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES OPPORTUNITY II, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES OPPORTUNITY II, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

EXHIBIT A

JOINT FILING AGREEMENT

Pursuant to Rule 13d-1(k)(1) promulgated pursuant to the Securities Exchange Act of 1934, as amended, the undersigned agree that the attached Schedule 13D is being filed on behalf of each of the undersigned.

Dated: April 1, 2024

ATLAS VENTURE FUND X, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES X, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES X, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE OPPORTUNITY FUND I, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

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: Chief Financial Officer

ATLAS VENTURE ASSOCIATES OPPORTUNITY I, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

CUSIP 746964105

ATLAS VENTURE OPPORTUNITY FUND II, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES OPPORTUNITY II, L.P.

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

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer

ATLAS VENTURE ASSOCIATES OPPORTUNITY II, LLC

By: /s/ Ommer Chohan
Name: Ommer Chohan
Title: Chief Financial Officer
