SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

(Amendment No. 1)*

X4 Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock, $0.001 par value per share

(Title of Class of Securities)

(CUSIP Number)

09/30/2026

(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)

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons Venrock Healthcare Capital Partners III, L.P.
2	Check the appropriate box if a member of a Group (see instructions) ☑ (a) ☐ (b)
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 0.00
	6	Shared Voting Power 7,644,072.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power 7,644,072.00
9		Aggregate Amount Beneficially Owned by Each Reporting Person 7,644,072.00
10		Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐
11		Percent of class represented by amount in row (9) 7.6 %
12		Type of Reporting Person (See Instructions) PN

SCHEDULE 13G

CUSIP No.

1		Names of Reporting Persons VHCP Co-Investment Holdings III, LLC
2		Check the appropriate box if a member of a Group (see instructions) ☑ (a) ☐ (b)
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 0.00
	6	Shared Voting Power 7,644,072.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power 7,644,072.00
9		Aggregate Amount Beneficially Owned by Each Reporting Person 7,644,072.00
10		Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐

11	Percent of class represented by amount in row (9) 7.6 %
12	Type of Reporting Person (See Instructions) OO

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons Venrock Healthcare Capital Partners EG, L.P.
2	Check the appropriate box if a member of a Group (see instructions) ☑ (a) ☐ (b)
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 0.00
	6 Shared Voting Power 7,644,072.00
	7 Sole Dispositive Power 0.00
	8 Shared Dispositive Power 7,644,072.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person 7,644,072.00
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐
11	Percent of class represented by amount in row (9) 7.6 %
12	Type of Reporting Person (See Instructions) PN

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons VHCP Management III, LLC
2	Check the appropriate box if a member of a Group (see instructions)

	☑ (a) ☐ (b)	
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 0.00
	6	Shared Voting Power 7,644,072.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power 7,644,072.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person 7,644,072.00	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐	
11	Percent of class represented by amount in row (9) 7.6 %	
12	Type of Reporting Person (See Instructions) OO	

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons VHCP Management EG, LLC	
2	Check the appropriate box if a member of a Group (see instructions) ☑ (a) ☐ (b)	
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 0.00
	6	Shared Voting Power 7,644,072.00
	7	Sole Dispositive Power 0.00
	8	Shared Dispositive Power

7,644,072.00

Aggregate Amount Beneficially Owned by Each Reporting Person

9

7,644,072.00

Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)

10

☐

Percent of class represented by amount in row (9)

11

7.6 %

Type of Reporting Person (See Instructions)

12

OO

SCHEDULE 13G

CUSIP No.

Names of Reporting Persons

1

Nimish Shah

Check the appropriate box if a member of a Group (see instructions)

2

☑ (a)
☐ (b)

3 Sec Use Only

Citizenship or Place of Organization

4

UNITED STATES

Number of Shares Beneficially Owned by Each Reporting Person With:

5 Sole Voting Power

0.00

6 Shared Voting Power

7,644,072.00

7 Sole Dispositive Power

0.00

8 Shared Dispositive Power

7,644,072.00

Aggregate Amount Beneficially Owned by Each Reporting Person

9

7,644,072.00

Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)

10

☐

Percent of class represented by amount in row (9)

11

7.6 %

Type of Reporting Person (See Instructions)

12

IN

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons Bong Y. Koh	
2	Check the appropriate box if a member of a Group (see instructions) ☑ (a) ☐ (b)	
3	Sec Use Only	
4	Citizenship or Place of Organization UNITED STATES	
Number of Shares Beneficially Owned by Each Reporting Person With:	5 Sole Voting Power 0.00	
	6 Shared Voting Power 7,644,072.00	
	7 Sole Dispositive Power 0.00	
	8 Shared Dispositive Power 7,644,072.00	
9	Aggregate Amount Beneficially Owned by Each Reporting Person 7,644,072.00	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐	
11	Percent of class represented by amount in row (9) 7.6 %	
12	Type of Reporting Person (See Instructions) IN	

SCHEDULE 13G

Item 1.

(a) Name of issuer:

X4 Pharmaceuticals, Inc.

(b) Address of issuer's principal executive offices:

61 North Beacon Street, 4th Floor, Boston, MA, 02134.

Item 2.

(a) Name of person filing:

The names of the persons filing this report (collectively, the "Reporting Persons") are: Venrock Healthcare Capital Partners III, L.P. ("VHCP III") VHCP Co-Investment Holdings III, LLC ("VHCP Co-Investment III") Venrock Healthcare Capital Partners EG, L.P. ("VHCP EG") VHCP Management III, LLC ("VHCP Management III") VHCP Management EG, LLC ("VHCP Management EG") Nimish Shah ("Shah") Bong Koh ("Koh") The Reporting Persons are members of a group for the purposes of this Schedule 13G/A.

(b) Address or principal business office or, if none, residence:

New York Office: 7 Bryant Park, 23rd Floor New York, NY 10018 Palo Alto Office: 3340 Hillview Avenue Palo Alto, CA 94304

(c) Citizenship:

All of the entities were organized in Delaware. Shah and Koh are both United States citizens.

(d) Title of class of securities:

Common Stock, $0.001 par value per share

(e) CUSIP No.:

Item 3. If this statement is filed pursuant to §§ 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

(a) ☐ Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o);

(b) ☐ Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c);

(c) ☐ Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c);

(d) ☐ Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);

(e) ☐ An investment adviser in accordance with § 240.13d-1(b)(1)(ii)(E);

(f) ☐ An employee benefit plan or endowment fund in accordance with § 240.13d-1(b)(1)(ii)(F);

(g) ☐ A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);

(h) ☐ A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);

(i) ☐ A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);

(j) ☐ A non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J). If filing as a non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J),
please specify the type of institution:

(k) ☐ Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K).

Item 4. Ownership

(a) Amount beneficially owned:

Row 9 of each Reporting Person's cover page to this Schedule 13G/A sets forth the aggregate number of shares of common stock of the Issuer beneficially owned by such Reporting Person as of September 30, 2026 and is incorporated by reference. The Reporting Persons' ownership of the Issuer's securities consists of (i) 3,502,608 shares of common stock held by VHCP III; (ii) 350,567 shares of common stock held by VHCP Co-Investment III; and (iii) 3,790,897 shares of common stock held by held by VHCP EG. VHCP Management III is the general partner of VHCP III and the manager of VHCP Co-Investment III. VHCP Management EG is the general partner of VHCP EG. Messrs. Shah and Koh are the voting members of VHCP Management III and VHCP Management EG.

(b) Percent of class:

Row 11 of each Reporting Person's cover page to this Schedule 13G/A sets forth the percentage of the shares of common stock of the Issuer beneficially owned by such Reporting Person as of September 30, 2026 and is incorporated by reference. The percentage set forth in each row 11 is based upon 100,903,502 shares of common stock outstanding as of September 30, 2026, as reported in the Issuer's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission (the "SEC") on November 4, 2026. %

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

(i) Sole power to vote or to direct the vote:

Row 5 of each Reporting Person's cover page to this Schedule 13G/A sets forth the sole power to vote or to direct the vote of securities of the Issuer beneficially owned by such Reporting Person as of September 30, 2026 and is incorporated by reference.

(ii) Shared power to vote or to direct the vote:

Row 6 of each Reporting Person's cover page to this Schedule 13G/A sets forth the shared power to vote or to direct the vote of securities of the Issuer beneficially owned by such Reporting Person as of September 30, 2026 and is incorporated by reference.

(iii) Sole power to dispose or to direct the disposition of:

Row 7 of each Reporting Person's cover page to this Schedule 13G/A sets forth the sole power to dispose or to direct the disposition of securities of the Issuer beneficially owned by such Reporting Person as of September 30, 2026 and is incorporated by reference.

(iv) Shared power to dispose or to direct the disposition of:

Row 8 of each Reporting Person's cover page to this Schedule 13G/A sets forth the shared power to dispose or to direct the disposition of securities of the Issuer beneficially owned by such Reporting Person as of September 30, 2026 and is incorporated by reference.

Item 5. Ownership of 5 Percent or Less of a Class.

Item 6. Ownership of more than 5 Percent on Behalf 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 or Control Person.

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. Certifications:

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.

Venrock Healthcare Capital Partners III, L.P.

Signature: /s/ Sherman G. Souther
Name/Title: By VHCP Management III, LLC, its General Partner, By Sherman G. Souther, Authorized Signatory
Date: 11/16/2026

VHCP Co-Investment Holdings III, LLC

Signature: /s/ Sherman G. Souther
Name/Title: By VHCP Management III, LLC, its Manager, By Sherman G. Souther, Authorized Signatory
Date: 11/16/2026

Venrock Healthcare Capital Partners EG, L.P.

Signature: /s/ Sherman G. Souther
Name/Title: By VHCP Management EG, LLC, its General Partner, By Sherman G. Souther, Authorized Signatory
Date: 11/16/2026

VHCP Management III, LLC

Signature: /s/ Sherman G. Souther
Name/Title: By Sherman G. Souther, Authorized Signatory
Date: 11/16/2026

VHCP Management EG, LLC

Signature: /s/ Sherman G. Souther
Name/Title: By Sherman G. Souther, Authorized Signatory
Date: 11/16/2026

Nimish Shah

Signature: /s/ Sherman G. Souther
Name/Title: By Sherman G. Souther, Attorney-in-fact

Date: 11/16/2026

Bong Y. Koh

Signature: /s/ Sherman G. Souther
Name/Title: By Sherman G. Souther, Attorney-in-fact
Date: 11/16/2026

Exhibit Information

Exhibit 24.1 Power of Attorney for Bong Y. Koh (incorporated by reference to Exhibit 24.1 to the Reporting Persons' Schedule 13G filed with the SEC on September 21, 2026). Exhibit 24.2 Power of Attorney for Nimish P. Shah (incorporated by reference to Exhibit 24.2 to the Reporting Persons' Schedule 13G filed with the SEC on September 21, 2026). Exhibit 99.1 Joint Filing Agreement (incorporated by reference to Exhibit 99.1 to the Reporting Persons' Schedule 13G filed with the SEC on September 21, 2026).