

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

(Amendment No. 2)*

X4 PHARMACEUTICALS, INC.

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

(CUSIP Number)

06/30/2026

(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

Perceptive Advisors LLC

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

DELAWARE

Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power
	0.00	
		Shared Voting Power
	6	
	8,085,006.00	
		Sole Dispositive Power
	7	
	0.00	
		Shared Dispositive Power
	8	
	8,085,006.00	
9	Aggregate Amount Beneficially Owned by Each Reporting Person	
	8,085,006.00	
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)	
	8.1 %	
12	Type of Reporting Person (See Instructions)	
	IA	

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons	
	Joseph Edelman	
	Check the appropriate box if a member of a Group (see instructions)	
2	☐ (a)	
	☒ (b)	
3	Sec Use Only	
4	Citizenship or Place of Organization	
	UNITED STATES	
		Sole Voting Power
	5	
	0.00	
Number of Shares Beneficially Owned by Each Reporting Person With:		Shared Voting Power
	6	
	8,085,006.00	
		Sole Dispositive Power
	7	
	0.00	
		Shared Dispositive Power
	8	
	8,085,006.00	
9	Aggregate Amount Beneficially Owned by Each Reporting Person	
	8,085,006.00	
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)
	8.1 %
12	Type of Reporting Person (See Instructions)
	IN

SCHEDULE 13G

CUSIP No.

	Names of Reporting Persons
1	Perceptive Life Sciences Master Fund, Ltd.
	Check the appropriate box if a member of a Group (see instructions)

2	☐ (a)
	☒ (b)

3	Sec Use Only
4	Citizenship or Place of Organization

	CAYMAN ISLANDS
	Sole Voting Power
5	0.00
	Shared Voting Power
6	8,085,006.00
	Sole Dispositive Power
7	0.00
	Shared Dispositive
8	Power
	8,085,006.00

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person
With:

	Aggregate Amount Beneficially Owned by Each Reporting Person
9	8,085,006.00
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)
	8.1 %
12	Type of Reporting Person (See Instructions)
	CO

SCHEDULE 13G

Item 1.

(a)	Name of issuer:
	X4 PHARMACEUTICALS, INC.
	Address of issuer's principal executive offices:
(b)	61 North Beacon Street, 4th Floor, Boston, Massachusetts

Item 2.

Name of person filing:

- (a) The names of the persons filing this report (collectively, the "Reporting Persons") with respect to shares of Common Stock, par value \$0.001 per share (the "Common Stock") of X4 PHARMACEUTICALS, INC. (the "Issuer") are: Perceptive Advisors LLC ("Perceptive Advisors") Joseph Edelman ("Mr. Edelman") Perceptive Life Sciences Master Fund, Ltd. (the "Master Fund")

Address or principal business office or, if none, residence:

- (b) The address of the principal business office of each of the Reporting Persons is: 51 Astor Place, 10th Floor New York, NY 10003

Citizenship:

- (c) Perceptive Advisors is a Delaware limited liability company Mr. Edelman is a United States citizen The Master Fund is a Cayman Islands corporation

Title of class of securities:

- (d) Common Stock, par value \$0.001 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

Amount beneficially owned:

The information required by this item with respect to each Reporting Person is set forth in Rows 5 through 9 and 11 of the cover pages to this Schedule 13G. The ownership percentages reported are based on 99,146,743 shares of Common Stock outstanding as of July 31, 2026, as reported in the Issuer's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on August 6, 2026. Neither Perceptive Advisors nor Mr. Edelman directly holds any shares of Common Stock or any Warrants. The Master Fund directly holds 7,933,491 shares of Common Stock and 151,515 Warrants immediately exercisable for shares of Common Stock, subject to the Beneficial Ownership Limitation (as defined below). The terms of the Warrants provide that the Warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended, more than 9.99% of the shares of Common Stock then issued and outstanding (the "Beneficial Ownership Limitation"). As of the date hereof, the Beneficial Ownership Limitation permits the Reporting Persons to exercise Warrants for an aggregate of 151,515 shares of Common Stock. Perceptive Advisors serves as the investment manager of the Master Fund. Mr. Edelman is the managing member of Perceptive Advisors.

Percent of class:

- (b) Perceptive Advisors: 8.1% Mr. Edelman: 8.1% Master Fund: 8.1% %

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

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

Perceptive Advisors: 0 Mr. Edelman: 0 Master Fund: 0

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

Perceptive Advisors: 8,085,006 Mr. Edelman: 8,085,006 Master Fund: 8,085,006

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

Perceptive Advisors: 0 Mr. Edelman: 0 Master Fund: 0

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

Perceptive Advisors: 8,085,006 Mr. Edelman: 8,085,006 Master Fund: 8,085,006

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.

Perceptive Advisors LLC

Signature: /s/ Joseph Edelman

Name/Title: Joseph Edelman, Managing Member

Date: 08/14/2026

Joseph Edelman

Signature: /s/ Joseph Edelman

Name/Title: Joseph Edelman

Date: 08/14/2026

Perceptive Life Sciences Master Fund, Ltd.

Signature: /s/ Joseph Edelman

Name/Title: Joseph Edelman, Managing Member

Date: 08/14/2026