
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549**

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No. 4)*

X4 PHARMACEUTICALS, INC.

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

98420X103

(CUSIP Number)

December 31, 2023

(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 OrbiMed Advisors LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input 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 11,494,437 (1)
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 11,494,437 (1)
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 11,494,437 (1)	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.7%	
12	TYPE OF REPORTING PERSON IA	

(1) Includes (i) 7,133,515 shares of common stock, par value \$0.001 per share ("Shares"), of X4 Pharmaceuticals, Inc. and (ii) 4,360,922 Shares issuable upon the exercise of warrants to purchase Shares.

1	NAME OF REPORTING PERSONS OrbiMed Capital GP IV LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions) (a) <input type="checkbox"/> (b) <input 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 11,494,437 (1)
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 11,494,437 (1)
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 11,494,437 (1)	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.7%	
12	TYPE OF REPORTING PERSON OO	

(1) Includes (i) 7,133,515 shares of common stock, par value \$0.001 per share ("Shares"), of X4 Pharmaceuticals, Inc. and (ii) 4,360,922 Shares issuable upon the exercise of warrants to purchase Shares.

Item 1. (a) Name of Issuer:

X4 Pharmaceuticals, Inc.

(b) Address of Issuer's Principal Executive Offices:

61 North Beacon Street, 4th Floor
Boston, Massachusetts 02134

Item 2. (a) Name of Person Filing:

OrbiMed Advisors LLC

OrbiMed Capital GP IV LLC

(b) Address of Principal Business Office:

601 Lexington Avenue, 54th Floor
New York, NY 10022

(c) Citizenship:

Please refer to Item 4 on each cover sheet for each filing person.

(d) Title of Class of Securities:

Common Stock, par value \$0.001 per share

(e) CUSIP No.:

98420X103

Item 3.

OrbiMed Capital GP IV LLC (“GP IV”) is the general partner of OrbiMed Private Investments IV, LP. OrbiMed Advisors LLC (“Advisors”) is an investment advisor in accordance with ss.240.13d-1(b)(1)(ii)(E) and is the managing member of GP IV.

Item 4. Ownership:

Information with respect the Reporting Persons' ownership as of December 31, 2023 is incorporated by reference to items (5) – (9) and (11) of the cover page for the Reporting Person.

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 on Behalf of Another Person.

The Reporting Persons are holding 6.7% of the shares of Common Stock in the aggregate on behalf of other persons who have the right to receive or the power to direct the receipt of dividends from, or proceeds from the sale of, such securities. Advisors exercises investment and voting power over the shares of Common Stock through a management committee comprised of Carl L. Gordon, Sven H. Borho, and W. Carter Neild, each of whom disclaims beneficial ownership of the shares of Common Stock reported herein.

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. 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.

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: February 14, 2024

OrbiMed Capital GP IV LLC

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ Carl L. Gordon

Name: Carl L. Gordon

Title: Member of OrbiMed Advisors LLC

OrbiMed Advisors LLC

By: /s/ Carl L. Gordon

Name: Carl L. Gordon

Title: Member

EXHIBIT A
JOINT FILING AGREEMENT

The undersigned hereby agree that this Amendment No. 4 to the Statement on Schedule 13G, dated December 31, 2023 (this "Schedule 13G"), with respect to the Common Stock, par value \$0.001 per share, of X4 Pharmaceuticals, Inc. is filed on behalf of each of us pursuant to and in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, and that this Joint Filing Agreement shall be included as an Exhibit to this Schedule 13G. Each of the undersigned agrees to be responsible for the timely filing of this Schedule 13G and for the completeness and accuracy of the information concerning itself contained therein. This Joint Filing Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned have executed this Joint Filing Agreement as of February 14, 2024.

OrbiMed Capital GP IV LLC

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ Carl L. Gordon

Name: Carl L. Gordon

Title: Member of OrbiMed Advisors LLC

OrbiMed Advisors LLC

By: /s/ Carl L. Gordon

Name: Carl L. Gordon

Title: Member
