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

SCHEDULE 13G/A
Under the Securities Exchange Act of 1934
(Amendment No. 1)*

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 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).

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1	NAMES OF REPORTING PERSONS Lincoln Park Capital Fund, LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Illinois	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,600,136
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,600,136
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,600,136	
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) 0.947%	
12	TYPE OF REPORTING PERSON OO	

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1	NAMES OF REPORTING PERSONS	Lincoln Park Capital, LLC
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP	(a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION	Illinois
5	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	SOLE VOTING POWER 0
6		SHARED VOTING POWER 1,600,136
7		SOLE DISPOSITIVE POWER 0
8		SHARED DISPOSITIVE POWER 1,600,136
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	1,600,136
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)	0.947%
12	TYPE OF REPORTING PERSON	OO

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1	NAMES OF REPORTING PERSONS	Rockledge Capital Corporation
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP	(a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION	Texas
5	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	SOLE VOTING POWER 0
6		SHARED VOTING POWER 1,600,136
7		SOLE DISPOSITIVE POWER 0
8		SHARED DISPOSITIVE POWER 1,600,136
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	1,600,136
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)	0.947%
12	TYPE OF REPORTING PERSON	CO

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1	NAMES OF REPORTING PERSONS Joshua B. Scheinfeld	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
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
	6	SHARED VOTING POWER 1,600,136
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,600,136
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,600,136	
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) 0.947%	
12	TYPE OF REPORTING PERSON IN	

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1	NAMES OF REPORTING PERSONS Alex Noah Investors, Inc.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Illinois	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,600,136
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,600,136
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,600,136	
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) 0.947%	
12	TYPE OF REPORTING PERSON CO	

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1	NAMES OF REPORTING PERSONS Jonathan I. Cope	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
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
	6	SHARED VOTING POWER 1,600,136
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,600,136
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,600,136	
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) 0.947%	
12	TYPE OF REPORTING PERSON IN	

Item 1.**(a) Name of Issuer:**

X4 Pharmaceuticals, Inc., a Delaware corporation ("Issuer")

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

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

Item 2.**(a) Name of Person Filing:**

Lincoln Park Capital Fund, LLC ("LPC Fund")

Lincoln Park Capital, LLC ("LPC")

Rockledge Capital Corporation ("RCC")

Joshua B. Scheinfeld ("Mr. Scheinfeld")

Alex Noah Investors, Inc. ("Alex Noah")

Jonathan I. Cope ("Mr. Cope" and, collectively with LPC Fund, LPC, RCC, Mr. Scheinfeld and Alex Noah, the "Reporting Persons")

(b) Address of Principal Business Office, or if None, Residence:

The address of the principal business office of each of the Reporting Persons is:

440 North Wells, Suite 410

Chicago, Illinois 60654

(c) Citizenship:

LPC Fund is an Illinois limited liability company

LPC is an Illinois limited liability company

RCC is a Texas corporation

Mr. Scheinfeld is a United States citizen

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Alex Noah is an Illinois corporation
Mr. Cope is a United States citizen

(d) **Title of Class of Securities:**

Common Stock, Par Value \$0.001 Per Share ("Common Stock")

(e) **CUSIP Number:**

98420X103

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

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

Item 4. Ownership.

Reporting person	Amount beneficially owned ¹ :	Percent of class ² :		Sole power to vote or direct the vote:	Shared power to vote or to direct the vote:	Sole power to dispose or to direct the disposition of:	Shared power to dispose or to direct the disposition of:
Lincoln Park Capital Fund, LLC	1,600,136	0.947 %		0	1,600,136	0	1,600,136
Lincoln Park Capital, LLC	1,600,136	0.947 %		0	1,600,136	0	1,600,136
Rockledge Capital Corporation	1,600,136	0.947 %		0	1,600,136	0	1,600,136
Joshua B. Scheinfeld	1,600,136	0.947 %		0	1,600,136	0	1,600,136
Alex Noah Investors, Inc.	1,600,136	0.947 %		0	1,600,136	0	1,600,136
Jonathan I. Cope	1,600,136	0.947 %		0	1,600,136	0	1,600,136

- 1 Represents (i) up to 227,272 shares of Common Stock issuable upon the exercise of Common Stock purchase warrants purchased by LPC Fund directly from the Issuer in December 2022 in a public offering (the "Public Offering"), which are currently exercisable at a price of \$1.10 per share and expire on December 7, 2027 (the "Class C Warrants"); (ii) up to 1,369,863 shares of Common Stock issuable upon the exercise of Common Stock purchase warrants purchased by LPC Fund directly from the Issuer in a private placement in July 2022 (the "2022 Private Placement"), which are currently exercisable at a price of \$1.095 per share and expire on July 6, 2027 (the "Pre-Funded Warrants"); and (iii) up to 3,000 shares of Common Stock issuable upon exercise of Common Stock purchase warrants purchased by LPC Fund directly from the Issuer in a private placement in November 2019 (the "2019 Private Placement"), which are currently exercisable at a price of \$8.70 per share (subject to adjustment as provided in the warrants) and expire on a date that is the earlier of (a) the date that is 30 calendar days from the date on which the Issuer issues a press release announcing top-line data from its Phase 3 clinical trial of mavorixafor for the treatment of patients with WHIM syndrome (or, if such date is not a business day, the next business day) and (b) November 28, 2024 (the "Class B Warrants," and together with the Class C Warrants and Pre-Funded Warrants, the "Warrants").
- 2 Based on the information contained in the Issuer's Form 10-Q, filed with the Securities and Exchange Commission on November 9, 2023, there was a total of 167,291,209 shares of common stock outstanding as of November 7, 2023. The percentage is calculated as of November 7, 2023, and assumes that all of the shares of Common Stock currently underlying the Warrants were issued and outstanding as of December 31, 2023.

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As of December 31, 2023, LPC Fund beneficially owned, directly, the following securities of the Issuer: (i) up to 227,272 shares of Common Stock issuable upon the exercise of Class C Warrants purchased by the LPC Fund in the Public Offering; (ii) up to 1,369,863 shares of Common Stock issuable upon the exercise of the Pre-Funded Warrants purchased by the LPC fund directly from the Issuer in the 2022 Private Placement; and (iii) up to 3,000 shares of Common Stock issuable upon exercise of the Class B Warrants purchased by the LPC Fund directly from the Issuer in the 2019 Private Placement.

LPC is the Managing Member of LPC Fund. RCC and Alex Noah are the Managing Members of LPC. Mr. Scheinfeld is the president and sole shareholder of RCC, as well as a principal of LPC. Mr. Cope is the president and sole shareholder of Alex Noah, as well as a principal of LPC. As a result of the foregoing, Mr. Scheinfeld and Mr. Cope have shared voting and shared investment power over the shares of Common Stock of the Issuer held directly by LPC Fund.

Pursuant to Section 13(d) of the Act and the rules thereunder, each of LPC, RCC, Mr. Scheinfeld, Alex Noah, and Mr. Cope may be deemed to be a beneficial owner of the shares of Common Stock of the Issuer beneficially owned directly by LPC Fund.

The foregoing should not be construed in and of itself as an admission by any Reporting Person as to beneficial ownership of any shares of Common Stock owned by another Reporting Person. Pursuant to Rule 13d-4 of the Act, each of LPC, RCC, Mr. Scheinfeld, Alex Noah, and Mr. Cope disclaims beneficial ownership of the shares of Common Stock of the Issuer held directly by LPC Fund.

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.

Not applicable.

Item 7. Identification and Classification of 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.

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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: February 14, 2024

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

JOSHUA B. SCHEINFELD

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL, LLC

BY: ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

JONATHAN I. COPE

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

LIST OF EXHIBITS

<u>Exhibit No.</u>	<u>Description</u>
99.1	Joint Filing Agreement

Joint Filing Agreement

The undersigned hereby agree that they are filing this statement jointly pursuant to Rule 13d-1(k)(1). Each of them is responsible for the timely filing of such Schedule 13G, and for the completeness and accuracy of the information concerning such person contained therein; but none of them is responsible for the completeness or accuracy of the information concerning the other persons making the filing, unless such person knows or has reason to believe that such information is inaccurate.

In accordance with Rule 13d-1(k)(1) promulgated under the Securities and Exchange Act of 1934, as amended, the undersigned hereby agree to the joint filing with each other on behalf of each of them of such Schedule 13G with respect to the Common Stock of the Issuer, beneficially owned by each of them. This Joint Filing Agreement shall be included as an exhibit to such Schedule 13G.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned hereby execute this Agreement as of February 14, 2023.

LINCOLN PARK CAPITAL FUND, LLC

LINCOLN PARK CAPITAL, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

BY: ROCKLEDGE CAPITAL CORPORATION

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

LINCOLN PARK CAPITAL FUND, LLC

LINCOLN PARK CAPITAL, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ALEX NOAH INVESTORS, INC.

BY: ALEX NOAH INVESTORS, INC.

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

ROCKLEDGE CAPITAL CORPORATION

ALEX NOAH INVESTORS, INC.

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President

JOSHUA B. SCHEINFELD

JONATHAN I. COPE

By: /s/ Joshua B. Scheinfeld
Name: Joshua B. Scheinfeld
Title: President

By: /s/ Jonathan I. Cope
Name: Jonathan I. Cope
Title: President
