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

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**SCHEDULE 13G**

**Under the Securities Exchange Act of 1934  
(Amendment No. 1)\***

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**X4 PHARMACEUTICALS, INC.**  
(Name of Issuer)

**Common Stock**  
(Title of Class of Securities)

**98420X103**  
(CUSIP Number)

**March 23, 2021**  
(Date of Event which Requires Filing of this Statement)

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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, as amended ("**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*).

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

Evan K. Hall, Esq.  
Haynes and Boone, LLP  
2323 Victory Avenue, Suite 700  
Dallas, Texas 75219-7673  
(214) 651-5000

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**SCHEDULE 13G**

CUSIP No. 98420X103

1	Names of Reporting Persons	
	Ikarian Capital, 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	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
		2,624,988 (1)
	7	Sole Dispositive Power
		0
	8	Shared Dispositive Power
		2,624,988 (1)
9	Aggregate Amount Beneficially Owned by Each Reporting Person	
	2,624,988 (1)	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)	
	<input type="checkbox"/>	
11	Percent of class represented by amount in row (9)	
	11.1% (2)	
12	Type of Reporting Person (See Instructions)	
	IA	

- (1) Includes 1,379,310 restricted shares of Common Stock acquired pursuant to a private placement.
- (2) Based upon 17,384,478 shares of Common Stock outstanding of the Issuer, as set forth in the Issuer's annual report Form 10-K filed with the U.S. Securities and Exchange Commission ("SEC") on March 19, 2021, and giving effect to an additional 6,271,836 restricted shares of Common Stock issued and sold by the Issuer to certain investors in a private placement, as set forth in the Issuer's current report Form 8-K filed with the SEC on March 19, 2021, which closed on March 23, 2021.

**SCHEDULE 13G**

CUSIP No. 98420X103

1	Names of Reporting Persons Ikarian Healthcare Master Fund, 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	Citizenship or Place of Organization Cayman Islands	
Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 0
	6	Shared Voting Power 2,205,499 (1)
	7	Sole Dispositive Power 0
	8	Shared Dispositive Power 2,205,499 (1)
9	Aggregate Amount Beneficially Owned by Each Reporting Person 2,205,499 (1)	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) <input type="checkbox"/>	
11	Percent of class represented by amount in row (9) 9.3% (2)	
12	Type of Reporting Person (See Instructions) PN	

- (1) Includes 1,379,310 restricted shares of Common Stock acquired pursuant to a private placement.
- (2) Based upon 17,384,478 shares of Common Stock outstanding of the Issuer, as set forth in the Issuer's annual report Form 10-K filed with the SEC on March 19, 2021, and giving effect to an additional 6,271,836 restricted shares of Common Stock issued and sold by the Issuer to certain investors in a private placement, as set forth in the Issuer's current report Form 8-K filed with the SEC on March 19, 2021, which closed on March 23, 2021.

**SCHEDULE 13G**

CUSIP No. 98420X103

1	Names of Reporting Persons	
	Ikarian Healthcare Fund GP, 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	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
		2,205,499 (1)
	7	Sole Dispositive Power
		0
	8	Shared Dispositive Power
		2,205,499 (1)
9	Aggregate Amount Beneficially Owned by Each Reporting Person	
	2,205,499 (1)	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)	
	<input type="checkbox"/>	
11	Percent of class represented by amount in row (9)	
	9.3% (2)	
12	Type of Reporting Person (See Instructions)	
	PN	

- (1) Includes 1,379,310 restricted shares of Common Stock acquired pursuant to a private placement.
- (2) Based upon 17,384,478 shares of Common Stock outstanding of the Issuer, as set forth in the Issuer's annual report Form 10-K filed with the SEC on March 19, 2021, and giving effect to an additional 6,271,836 restricted shares of Common Stock issued and sold by the Issuer to certain investors in a private placement, as set forth in the Issuer's current report Form 8-K filed with the SEC on March 19, 2021, which closed on March 23, 2021.

**SCHEDULE 13G**

CUSIP No. 98420X103

1	Names of Reporting Persons	
	Chart Westcott	
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	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
		2,624,988 (1)
	7	Sole Dispositive Power
		0
	8	Shared Dispositive Power
		2,624,988 (1)
9	Aggregate Amount Beneficially Owned by Each Reporting Person	
	2,624,988 (1)	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)	
	<input type="checkbox"/>	
11	Percent of class represented by amount in row (9)	
	11.1% (2)	
12	Type of Reporting Person (See Instructions)	
	IN; HC	

- (1) Includes 1,379,310 restricted shares of Common Stock acquired pursuant to a private placement.
- (2) Based upon 17,384,478 shares of Common Stock outstanding of the Issuer, as set forth in the Issuer's annual report Form 10-K filed with the SEC on March 19, 2021, and giving effect to an additional 6,271,836 restricted shares of Common Stock issued and sold by the Issuer to certain investors in a private placement, as set forth in the Issuer's current report Form 8-K filed with the SEC on March 19, 2021, which closed on March 23, 2021.

**SCHEDULE 13G**

CUSIP No. 98420X103

1	Names of Reporting Persons	
	Neil Shahrestani	
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	Citizenship or Place of Organization	
	United States of America	
Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power
		0
	6	Shared Voting Power
		2,624,988 (1)
	7	Sole Dispositive Power
		0
	8	Shared Dispositive Power
		2,624,988 (1)
9	Aggregate Amount Beneficially Owned by Each Reporting Person	
	2,624,988 (1)	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)	
	<input type="checkbox"/>	
11	Percent of class represented by amount in row (9)	
	11.1% (2)	
12	Type of Reporting Person (See Instructions)	
	IN; HC	

- (1) Includes 1,379,310 restricted shares of Common Stock acquired pursuant to a private placement.
- (2) Based upon 17,384,478 shares of Common Stock outstanding of the Issuer, as set forth in the Issuer's annual report Form 10-K filed with the SEC on March 19, 2021, and giving effect to an additional 6,271,836 restricted shares of Common Stock issued and sold by the Issuer to certain investors in a private placement, as set forth in the Issuer's current report Form 8-K filed with the SEC on March 19, 2021, which closed on March 23, 2021.

**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:**

This statement is jointly filed by and on behalf of each of Ikarian Capital, LLC, a Delaware limited liability company ("***Ikarian Capital***"), Ikarian Healthcare Master Fund, L.P, a Cayman Islands exempted limited partnership (the "***Fund***"), Ikarian Healthcare Fund GP, L.P., a Delaware limited partnership ("***Ikarian GP***"), Chart Westcott and Neil Shahrestani (collectively referred herein as the "***Reporting Persons***"). Ikarian Capital is the investment manager of, and may be deemed to indirectly beneficially own securities owned by, the Fund. Ikarian GP is the general partner of, and may be deemed to indirectly beneficially own securities owned by, the Fund. Ikarian Capital is also the general partner of, and may be deemed to indirectly beneficially own, securities beneficially owned by Ikarian GP. Ikarian Capital is a sub-advisor for certain separate managed accounts (collectively, the "***Managed Accounts***") and may be deemed to indirectly beneficially own securities owned by the Managed Accounts. Ikarian Capital is ultimately owned and controlled by Chart Westcott Living Trust, of which Mr. Westcott serves as the sole trustee (the "***Trust***"), and indirectly by Mr. Shahrestani. Accordingly, each of Mr. Westcott, as sole trustee of the Trust, and Mr. Shahrestani may be deemed to indirectly beneficially own securities beneficially owned by, Ikarian Capital. The Fund and the Managed Accounts are the record and direct beneficial owners of the securities covered by this statement. The Fund disclaims beneficial ownership of the shares held by the Managed Accounts.

Each Reporting Person declares that neither the filing of this statement nor anything herein shall be construed as an admission that such person is, for the purposes of Section 13(d) or 13(g) of the Act or any other purpose, the beneficial owner of any securities covered by this statement.

Each Reporting Person may be deemed to be a member of a group with respect to the issuer or securities of the issuer for the purpose of Section 13(d) or 13(g) of the Act. Each of the Reporting Persons declares that neither the filing of this statement nor anything herein shall be construed as an admission that such person is, for the purpose of Section 13(d) or 13(g) of the Act or any other purpose, (i) acting (or has agreed or is agreeing to act together with any other person) as a partnership, limited partnership, syndicate, or other group for the purpose of acquiring, holding, or disposing of securities of the issuer or otherwise with respect to the issuer or any securities of the issuer or (ii) a member of any group with respect to the issuer or any securities of the issuer.

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

The address of the principal business office of each of the Reporting Persons is c/o Ikarian Capital, LLC, 100 Crescent Court, Suite 1620, Dallas, Texas 75201.

**(c) Citizenship:**

See Item 4 on the cover page(s) hereto.

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

Common Stock

**(e) CUSIP No.:**

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;
- (b)  Bank as defined in Section 3(a)(6) of the Act;
- (c)  Insurance company as defined in Section 3(a)(19) of the Act;
- (d)  Investment company registered under Section 8 of the Investment Company Act of 1940;
- (e)  An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);
- (f)  An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);
- (g)  A parent holding company or control person in accordance with Rule 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;
- (j)  A non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J);
- (k)  Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K). If filing as a non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J), please specify the type of institution: \_\_\_\_\_

**Item 4. Ownership**

- (a) **Amount Beneficially Owned as of the time of filing:** See Item 9 on the cover pages(s) hereto.
- (b) **Percent of Class as of the time of filing:** See Item 11 on the cover page(s) hereto.
- (c) **As of the time of filing, number of shares as to which such person has:**
  - (i) **Sole power to vote or to direct the vote:** See Item 5 on the cover pages hereto.
  - (ii) **Shared power to vote or to direct the vote:** See Item 6 on the cover pages hereto.
  - (iii) **Sole power to dispose or to direct the disposition of:** See Item 7 on the cover pages hereto.
  - (iv) **Shared power to dispose or to direct the disposition of:** See Item 8 on the cover pages hereto.



**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 Persons have ceased to be the beneficial owners 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 information set forth in Item 2(a) is incorporated by reference 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. 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.

Dated: April 8, 2021

**IKARIAN CAPITAL, LLC**

By: Chart Westcott Living Trust  
Its: Manager

By: /s/ Chart Westcott  
\_\_\_\_\_  
Chart Westcott, Trustee

**IKARIAN HEALTHCARE MASTER FUND, L.P.**

By: Ikarian Healthcare Fund GP, L.P.  
Its: General Partner

By: Ikarian Capital, LLC  
Its: General Partner

By: Chart Westcott Living Trust  
Its: Manager

By: /s/ Chart Westcott  
\_\_\_\_\_  
Chart Westcott, Trustee

**IKARIAN HEALTHCARE FUND GP, L.P.**

By: Ikarian Capital, LLC  
Its: General Partner

By: Chart Westcott Living Trust  
Its: Manager

By: /s/ Chart Westcott  
\_\_\_\_\_  
Chart Westcott, Trustee

**CHART WESTCOTT LIVING TRUST**

By: /s/ Chart Westcott  
\_\_\_\_\_  
Chart Westcott, Trustee

**NEIL SHAHRESTANI**

/s/ Neil Shahrestani  
\_\_\_\_\_

**EXHIBIT INDEX**

<b>Exhibit</b>	<b>Description of Exhibit</b>
99.1	Joint Filing Agreement (incorporated herein by reference to Exhibit 99.1 to the Schedule 13G filed on December 30, 2020, by the Reporting Persons with the Securities and Exchange Commission).