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SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934

**X4 Pharmaceuticals, Inc**

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(Name of Issuer)

**Common Stock, par value \$0.001 per share**

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(Title of Class of Securities)

**98420X202**

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(CUSIP Number)

**Mark Shamia  
Coastlands Capital LP, 601 California Street, Suite 1210  
San Francisco, CA, 94108  
(415) 249-1282**

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

**08/11/2025**

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(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

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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SCHEDULE 13D

CUSIP No. 98420X202

Name of reporting person

1

Coastlands Capital LP

Check the appropriate box if a member of a Group (See Instructions)

2

- (a)  
 (b)

3 SEC use only  
Source of funds (See Instructions)

4 WC  
Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)

5   
Citizenship or place of organization

6 DELAWARE

7 Sole Voting Power

Number of Shares Beneficially Owned by Each Reporting Person With: 8 0.00  
Shared Voting Power

9 2,479,645.00  
Sole Dispositive Power

10 0.00  
Shared Dispositive Power

11 2,479,645.00  
Aggregate amount beneficially owned by each reporting person

12 Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)

13   
Percent of class represented by amount in Row (11)

14 9.99 %  
Type of Reporting Person (See Instructions)

IA, PN

**Comment for Type of Reporting Person:** Percentage calculated based on 11,408,357 shares of Common Stock outstanding on August 4, 2025, as reported in the Form 10-Q filed by the Issuer for the quarter ended June 30, 2025, plus 11,040,776 shares of Common Stock issued in a private placement transaction, which closed on August 13, 2025. The securities exclude shares of Common Stock issuable upon exercise of a pre-funded warrant in excess of the beneficial ownership limitation of 9.99%.

## SCHEDULE 13D

**CUSIP No.** 98420X202

1 Name of reporting person  
Coastlands Capital Partners LP  
Check the appropriate box if a member of a Group (See Instructions)

2  (a)  
 (b)

3 SEC use only  
Source of funds (See Instructions)

4 WC  
Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)

5

6 Citizenship or place of organization

DELAWARE

Sole Voting Power

7

Number of  
Shares  
Beneficially

0.00

Shared Voting Power

8

Owned by  
Each

2,479,645.00

Sole Dispositive Power

Reporting  
Person

9

0.00

With:

Shared Dispositive Power

10

2,479,645.00

Aggregate amount beneficially owned by each reporting person

11

2,479,645.00

Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)

12

Percent of class represented by amount in Row (11)

13

9.99 %

Type of Reporting Person (See Instructions)

14

PN

**Comment for Type of Reporting Person:** Percentage calculated based on 11,408,357 shares of Common Stock outstanding on August 4, 2025, as reported in the Form 10-Q filed by the Issuer for the quarter ended June 30, 2025, plus 11,040,776 shares of Common Stock issued in a private placement transaction, which closed on August 13, 2025. The securities exclude shares of Common Stock issuable upon exercise of a pre-funded warrant in excess of the beneficial ownership limitation of 9.99%.

## SCHEDULE 13D

**CUSIP No.** 98420X202

Name of reporting person

1

Coastlands Capital GP LLC

Check the appropriate box if a member of a Group (See Instructions)

2

(a)

(b)

3

SEC use only

Source of funds (See Instructions)

4

WC

Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)

5

Citizenship or place of organization

6

DELAWARE

Number of  
Shares

7

Sole Voting Power

Beneficially  
Owned by  
Each

0.00

Shared Voting Power

8

Reporting  
Person

2,479,645.00

With:

9

Sole Dispositive Power

0.00  
 Shared Dispositive Power  
 10  
 2,479,645.00  
 Aggregate amount beneficially owned by each reporting person  
 11  
 2,479,645.00  
 Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)  
 12  
  
 Percent of class represented by amount in Row (11)  
 13  
 9.99 %  
 Type of Reporting Person (See Instructions)  
 14  
 OO

**Comment for Type of Reporting Person:** Percentage calculated based on 11,408,357 shares of Common Stock outstanding on August 4, 2025, as reported in the Form 10-Q filed by the Issuer for the quarter ended June 30, 2025, plus 11,040,776 shares of Common Stock issued in a private placement transaction, which closed on August 13, 2025. The securities exclude shares of Common Stock issuable upon exercise of a pre-funded warrant in excess of the beneficial ownership limitation of 9.99%.

## SCHEDULE 13D

**CUSIP No.** 98420X202

1 Name of reporting person  
 Coastlands Capital LLC  
 Check the appropriate box if a member of a Group (See Instructions)  
 2  
 (a)  
 (b)  
 3 SEC use only  
 Source of funds (See Instructions)  
 4  
 WC  
 Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)  
 5  
  
 Citizenship or place of organization  
 6  
 DELAWARE  
 Sole Voting Power  
 7  
 Number of Shares Beneficially Owned by Each Reporting Person With:  
 0.00  
 Shared Voting Power  
 8  
 2,479,645.00  
 Sole Dispositive Power  
 9  
 0.00  
 Shared Dispositive Power  
 10  
 2,479,645.00  
 Aggregate amount beneficially owned by each reporting person  
 11  
 2,479,645.00

12 Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)

Percent of class represented by amount in Row (11)

13 9.99 %

Type of Reporting Person (See Instructions)

14 HC, OO

**Comment for Type of Reporting Person:** Percentage calculated based on 11,408,357 shares of Common Stock outstanding on August 4, 2025, as reported in the Form 10-Q filed by the Issuer for the quarter ended June 30, 2025, plus 11,040,776 shares of Common Stock issued in a private placement transaction, which closed on August 13, 2025. The securities exclude shares of Common Stock issuable upon exercise of a pre-funded warrant in excess of the beneficial ownership limitation of 9.99%.

## SCHEDULE 13D

**CUSIP No.** 98420X202

Name of reporting person

1 Matthew D. Perry

Check the appropriate box if a member of a Group (See Instructions)

2  (a)  
 (b)

3 SEC use only

Source of funds (See Instructions)

4 WC

Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)

5

Citizenship or place of organization

6 UNITED STATES

Sole Voting Power

7

0.00

Number of Shares

Shared Voting Power

Beneficially 8

2,479,645.00

Owned by

Sole Dispositive Power

Each

9

0.00

Reporting Person

Shared Dispositive Power

With:

10

2,479,645.00

Aggregate amount beneficially owned by each reporting person

11 2,479,645.00

Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)

12

Percent of class represented by amount in Row (11)

13 9.99 %

Type of Reporting Person (See Instructions)

14 IN, HC

**Comment for Type of Reporting Person:** Percentage calculated based on 11,408,357 shares of Common Stock outstanding on August 4, 2025, as reported in the Form 10-Q filed by the Issuer for the quarter ended June 30, 2025, plus 11,040,776 shares of Common Stock issued in a private placement transaction, which closed on August 13, 2025. The securities exclude shares of Common Stock issuable upon exercise of a pre-funded warrant in excess of the beneficial ownership limitation of 9.99%.

## SCHEDULE 13D

### Item 1. Security and Issuer

Title of Class of Securities:

(a) Common Stock, par value \$0.001 per share

Name of Issuer:

(b) X4 Pharmaceuticals, Inc

Address of Issuer's Principal Executive Offices:

(c) 61 North Beacon Street, 4th Floor, Boston, MASSACHUSETTS , 02134.

### Item 2. Identity and Background

This Schedule 13D is being filed jointly by Coastlands Capital LP, a Delaware limited partnership ("Coastlands"), Coastlands Capital Partners LP, a Delaware limited partnership (the "Partnership"), Coastlands Capital GP LLC, a Delaware limited liability company (the "General Partner"), Coastlands Capital LLC, a Delaware limited liability company ("Coastlands GP" and together with Coastlands, the Partnership and the General Partner, the "Coastlands Entities"), and Matthew D. Perry (together with the Coastlands Entities, the "Reporting Persons"). The joint filing agreement of the Reporting Persons is attached as Exhibit 99.1 to this Schedule 13D. Coastlands and the General Partner are the investment adviser and general partner, respectively, of the Partnership. Coastlands GP is the general partner of Coastlands. Mr. Perry is the control person of Coastlands, Coastlands GP and the General Partner. The Reporting Persons are filing this Schedule 13D jointly, but not as members of a group, and each disclaims membership in a group. Each Reporting Person also disclaims beneficial ownership of Common Stock except to the extent of that person's pecuniary interest therein. In addition, the filing of this Schedule 13D on behalf of the Partnership should not be construed as an admission that it is, and it disclaims that it is, a beneficial owner, as defined in Rule 13d-3 under the Act, of any Common Stock covered by this Schedule 13D.

(a) The principal business address for each of the Reporting Persons is 601 California Street, Suite 1210, San Francisco, CA 94108.

(b) Each of the Coastlands Entities is principally engaged in the business of investment in securities. The principal occupation of Mr. Perry is investment management.

(c) During the last five years, none of the Reporting Persons has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(d) During the last five years, none of the Reporting Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violation of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(e) See Item 2(a) hereof for citizenship information for the Coastlands Entities. Mr. Perry is a citizen of the United States.

### Item 3. Source and Amount of Funds or Other Consideration

On August 11, 2025 and August 12, 2025, the Issuer entered into Securities Purchase Agreements (the "Purchase Agreements") with certain investors identified therein, including Coastlands (collectively, the "Investors"), pursuant to which the Investors purchased from the Issuer an aggregate of 11,040,776 shares of Common Stock, at a purchase price of \$1.42 per share, and pre-funded warrants to purchase an aggregate of 48,852,772 shares of Common Stock, at a purchase price of \$1.419 per pre-funded warrant (the "August 2025 Financing"). The August 2025 Financing closed on August 13, 2025. In the August 2025 Financing, Coastlands purchased a pre-funded warrant exercisable for 7,047,216 shares of Common Stock for a purchase price of \$9,999,999.50. Coastlands used its own working capital to acquire the securities. References to and the description of the Purchase Agreement set forth above in this Item 3 do not purport to be complete and are qualified in their entirety by reference to the full text of the Purchase Agreement, which is attached hereto as Exhibit 99.2 and incorporated by reference herein.

### Item 4. Purpose of Transaction

Concurrent with the August 2025 Financing, the Issuer's board of directors (the "Board") approved (i) the termination of each of the Chief Executive Officer and Chief Financial Officer of the Company and (ii) the appointment of an Executive Chairman, a new Chief Financial Officer and a new President of the Company. Except as described in this Schedule 13D, the Reporting Persons do not have any present plans or proposals that relate to or would result in any of the actions described in subparagraphs (a) through (j) of Item 4 of Schedule 13D, although, the Reporting Persons, at any time and from time to time, may review, reconsider and change their position and/or change their purpose

and/or develop such plans and may seek to influence management or the board of directors of the Company with respect to the business and affairs of the Company and may from time to time consider pursuing or proposing such matters with advisors, the Issuer or other persons.

Item 5. Interest in Securities of the Issuer

The information set forth in Items 2, 3 and 6 and on the cover pages of this Schedule 13D is incorporated by reference in its entirety into this Item 5. As of the date hereof, Coastlands directly holds 107,500 shares of Common Stock and a pre-funded warrant exercisable for up to 7,047,216 shares of Common Stock. As a result of the Beneficial Ownership Blocker (as defined below), the Reporting Persons are precluded from exercising the pre-funded warrant into shares of Common Stock to the extent that the Reporting Persons would, after such exercise, collectively beneficially own in excess of 9.99% of the outstanding Common Stock of the Issuer. Accordingly, pursuant to Rule 13d-3 of the Act and the relationships described in Item 2 of this Schedule 13D, the Reporting Persons may be

- (a) deemed to collectively beneficially own 9.99% of the outstanding Common Stock of the Issuer, representing 2,479,645 shares of Common Stock as of the date hereof. The calculation of the beneficial ownership of the Reporting Persons is based on (i) 11,408,357 shares of Common Stock issued and outstanding as of August 4, 2025, as reported by the Issuer in its Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2025, filed with the Securities and Exchange Commission on August 8, 2025; (ii) 11,040,776 shares of Common Stock issued by the Issuer in the August 2025 Financing; and (iii) 2,372,145 shares of Common Stock issuable upon the exercise of the pre-funded warrant held by the Reporting Persons, which reflects the Beneficial Ownership Blocker.
- (b) See Item 5(a) hereof.
- (c) See Item 3 of this Schedule 13D. On August 12, 2025, the Reporting Persons purchased 107,500 shares of Common Stock in the open market at a price per share of \$1.7074, for an aggregate purchase price of \$183,545.50.
- (d) Except as otherwise described in this Item 5, no one other than the Reporting Persons has the right to receive, or the power to direct the receipt of, dividends from, or the proceeds from the sale of, any of the Common Stock beneficially owned by the Reporting Persons as described in this Item 5.
- (e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer

**Pre-Funded Warrants Exercisability.** The pre-funded warrant held by the Reporting Persons is exercisable at any time after its original issuance. **Exercise Blocker.** Exercise of each pre-funded warrant is prohibited if, as a result of such exercise, the holder, together with its affiliates and other persons whose beneficial ownership would be aggregated with the holder's for purposes of Section 13(d) of the Act, would beneficially own more than 9.99% of the total number of shares of Common Stock then issued and outstanding immediately after giving effect to the exercise (the "Beneficial Ownership Blocker"). **Exercise Price.** The Reporting Persons hold pre-funded warrants exercisable for up to 7,047,216 shares of Common Stock with an exercise price of \$0.001 per share. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations or reclassifications affecting the Common Stock. **Fundamental Transaction.** If a Fundamental Transaction (as defined in the pre-funded warrant) occurs while a pre-funded warrant is outstanding, then upon any subsequent exercise of the pre-funded warrant, the holder thereof has the right to receive the same amount and kind of securities, cash or property as such holder would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of shares of Common Stock then issuable upon exercise in full of the pre-funded warrant (without regard to any limitations on exercise). **Rights as a Stockholder.** Except as otherwise provided in the pre-funded warrant or by virtue of the holder's ownership of Common Stock, the holder of a pre-funded warrant does not have the rights or privileges of a holder of Common Stock, including any voting rights, until the holder exercises the pre-funded warrant. References to and the description of the pre-funded warrant set forth in this Item 6 do not purport to be complete and are qualified in their entirety by reference to the form of pre-funded warrant, which is attached hereto as Exhibit 99.3 and incorporated by reference herein. **Registration Rights Agreement** The Reporting Persons have entered into a resale registration rights agreement with the Issuer in connection with the August 2025 Financing pursuant to which the Issuer agreed to file a registration statement covering the resale, by the Reporting Persons, of certain shares of Common Stock held by the Reporting Persons and to use commercially reasonable efforts to cause such registration statement to remain effective until such time as all such shares of Common Stock have been sold or no longer qualify as registrable securities. References to and the description of the registration rights agreement set forth in this Item 6 do not purport to be complete and are qualified in their entirety by reference to the registration rights agreement, which is attached hereto as Exhibit 99.4 and incorporated by reference herein.

Item 7. Material to be Filed as Exhibits.

Exhibit 99.1 Agreement Regarding Joint Filing of Statement on Schedule 13D or 13G Exhibit 99.2 Purchase Agreement (incorporated by reference from Exhibit 10.1 to the Issuer's Current Report on Form 8-K filed with the SEC on August 12, 2025) Exhibit 99.3 Form of Pre-Funded Warrant (incorporated by reference from Exhibit 4.1 to the Issuer's Current Report on Form 8-K filed with the SEC on August 12, 2025) Exhibit 99.4 August 2025 Registration Rights Agreement (incorporated by reference from Exhibit 10.2 to the Issuer's Current Report on Form 8-K filed with the SEC on August 12, 2025)

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.

Coastlands Capital LP

Signature: /s/ Mark Shamia  
Name/Title: Chief Operating Officer of the General Partner,  
Coastlands Capital LLC  
Date: 08/18/2025

Coastlands Capital Partners LP

Signature: /s/ Mark Shamia  
Name/Title: Chief Operating Officer of the General Partner,  
Coastlands Capital GP LLC  
Date: 08/18/2025

Coastlands Capital GP LLC

Signature: /s/ Mark Shamia  
Name/Title: Chief Operating Officer  
Date: 08/18/2025

Coastlands Capital LLC

Signature: /s/ Mark Shamia  
Name/Title: Chief Operating Officer  
Date: 08/18/2025

Matthew D. Perry

Signature: /s/ Matthew D. Perry  
Name/Title: Reporting person  
Date: 08/18/2025

AGREEMENT REGARDING JOINT FILING  
OF STATEMENT ON SCHEDULE 13D OR 13G

The undersigned agree to file jointly with the Securities and Exchange Commission (the "SEC") any and all statements on Schedule 13D or Schedule 13G or Forms 3, 4 or 5 (and any amendments or supplements thereto) required under section 13(d) and 16(a) of the Securities Exchange Act of 1934, as amended, in connection with purchases by the undersigned of the securities of any issuer. For that purpose, the undersigned hereby constitute and appoint Coastlands Capital LP, a Delaware limited partnership, as their true and lawful agent and attorney-in-fact, with full power and authority for and on behalf of the undersigned to prepare or cause to be prepared, sign, file with the SEC and furnish to any other person all certificates, instruments, agreements and documents necessary to comply with section 13(d) and section 16(a) of the Securities Exchange Act of 1934, as amended, in connection with said purchases, and to do and perform every act necessary and proper to be done incident to the exercise of the foregoing power, as fully as the undersigned might or could do if personally present.

Dated: August 18, 2025

**COASTLANDS CAPITAL LP**

By: Coastlands Capital LLC,  
General Partner

By: /s/ Mark Shamia  
Mark Shamia  
Chief Operating Officer

**COASTLANDS CAPITAL LLC**

By: /s/ Mark Shamia  
Mark Shamia  
Chief Operating Officer

**COASTLANDS CAPITAL PARTNERS LP**

By: Coastlands Capital GP LLC,  
General Partner

By: /s/ Mark Shamia  
Mark Shamia  
Chief Operating Officer

**COASTLANDS CAPITAL GP LLC**

By: /s/ Mark Shamia  
Mark Shamia  
Chief Operating Officer

/s/ Matthew D. Perry  
Matthew D. Perry

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