

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D
Under the Securities Exchange Act of 1934

(Amendment No. 4)

Synta Pharmaceuticals Corp.
(Name of Issuer)

Common Stock
(Title of Class of Securities)

87162T206
(CUSIP Number)

Mr. Scott B. Bernstein
Caxton Corporation
731 Alexander Road, Bldg. 2
Princeton, New Jersey 08540
(609) 419-1800
(Name, Address and Telephone Number of Person Authorized to
Receive Notices and Communications)

6/29/2012
(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 Section 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. | |

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Section 240.13d-7 for other parties to whom copies are to be sent.

*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 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).

- (1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

CxSynta LLC
02-0604347

- (2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) | ☐ |
(b) | ☒ |

- (3) SEC Use Only.

- (4) Source of Funds (See Instructions).
WC

- (5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) | ☐ |

- (6) Citizenship or Place of Organization
Delaware

Number of Shares Beneficially Owned by Each Reporting Person With:

- (7) Sole Voting Power:

0

(8) Shared Voting Power:

7,761,716

(9) Sole Dispositive Power:

0

(10) Shared Dispositive Power:

7,761,716

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.

7,761,716

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). ☐

(13) Percent of Class Represented by Amount in Row (11).

13.5%

(14) Type of Reporting Person (See Instructions).

OO

(1) Names of Reporting Persons.

I.R.S. Identification Nos. of above persons (entities only).

Caxton Corporation

22-2437619

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) ☐

(b) ☒

(3) SEC Use Only.

(4) Source of Funds (See Instructions).

AF

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items

2(d) or 2(e) ☐

(6) Citizenship or Place of Organization

Delaware

Number of Shares Beneficially Owned by Each Reporting Person With:

(7) Sole Voting Power:

0

(8) Shared Voting Power:

7,761,716

(9) Sole Dispositive Power:

0

(10) Shared Dispositive Power:

7,761,716

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.

7,761,716

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). ☐

(13) Percent of Class Represented by Amount in Row (11).

13.5%

(14) Type of Reporting Person (See Instructions).

CO

(1) Names of Reporting Persons.

I.R.S. Identification Nos. of above persons (entities only).

Kovner 2011-A Investment Trust

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) ☐

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
00

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) |_|

(6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

(7) Sole Voting Power:
125,000

(8) Shared Voting Power:
0

(9) Sole Dispositive Power:
125,000

(10) Shared Dispositive Power:
0

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.
125,000

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). |_|

(13) Percent of Class Represented by Amount in Row (11).
0.2%

(14) Type of Reporting Person (See Instructions).
00

(1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner 2011-B Investment Trust

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) |_|
(b) |x|

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
00

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) |_|

(6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

(7) Sole Voting Power:
125,000

(8) Shared Voting Power:
0

(9) Sole Dispositive Power:
125,000

(10) Shared Dispositive Power:
0

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.
125,000

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). |_☐

(13) Percent of Class Represented by Amount in Row (11).
0.2%

(14) Type of Reporting Person (See Instructions).
OO

(1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner 2011-C Investment Trust

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) |_☐
(b) |x☒

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
OO

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) |_☐

(6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

(7) Sole Voting Power:
125,000

(8) Shared Voting Power:
0

(9) Sole Dispositive Power:
125,000

(10) Shared Dispositive Power:
0

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.
125,000

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). |_☐

(13) Percent of Class Represented by Amount in Row (11).
0.2%

(14) Type of Reporting Person (See Instructions).
OO

(1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner 2011-D Investment Trust

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) |_☐
(b) |x☒

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
OO

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) |_☐

(6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

- (7) Sole Voting Power:
125,000
- (8) Shared Voting Power:
0
- (9) Sole Dispositive Power:
125,000
- (10) Shared Dispositive Power:
0
- (11) Aggregate Amount Beneficially Owned by Each Reporting Person.
125,000
- (12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). ☐
- (13) Percent of Class Represented by Amount in Row (11).
0.2%
- (14) Type of Reporting Person (See Instructions).
00

- (1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner 2012-A Synta Investment Trust
- (2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) ☐
(b) ☒
- (3) SEC Use Only.
- (4) Source of Funds (See Instructions).
00
- (5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) ☐
- (6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

- (7) Sole Voting Power:
0
- (8) Shared Voting Power:
475,000
- (9) Sole Dispositive Power:
0
- (10) Shared Dispositive Power:
475,000
- (11) Aggregate Amount Beneficially Owned by Each Reporting Person.
475,000
- (12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). ☐
- (13) Percent of Class Represented by Amount in Row (11).
0.8%
- (14) Type of Reporting Person (See Instructions).
00
- (1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner 2012-B Synta Investment Trust

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) ☐ (b) ☒

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
OO

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) ☐

(6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

(7) Sole Voting Power:
0

(8) Shared Voting Power:
475,000

(9) Sole Dispositive Power:
0

(10) Shared Dispositive Power:
475,000

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.
475,000

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). ☐

(13) Percent of Class Represented by Amount in Row (11).
0.8%

(14) Type of Reporting Person (See Instructions).
OO

(1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner 2012-C Synta Investment Trust

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) ☐ (b) ☒

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
OO

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) ☐

(6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

(7) Sole Voting Power:
0

(8) Shared Voting Power:
475,000

(9) Sole Dispositive Power:
0

(10) Shared Dispositive Power:
475,000

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.
475,000

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). |_☐

(13) Percent of Class Represented by Amount in Row (11).
0.8%

(14) Type of Reporting Person (See Instructions).
OO

(1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner 2012-D Synta Investment Trust

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) |_☐
(b) |x☒

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
OO

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) |_☐

(6) Citizenship or Place of Organization
New York

Number of Shares Beneficially Owned by Each Reporting Person With:

(7) Sole Voting Power:
0

(8) Shared Voting Power:
475,000

(9) Sole Dispositive Power:
0

(10) Shared Dispositive Power:
475,000

(11) Aggregate Amount Beneficially Owned by Each Reporting Person.
475,000

(12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). |_☐

(13) Percent of Class Represented by Amount in Row (11).
0.8%

(14) Type of Reporting Person (See Instructions).
OO

(1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Ben-Ur, David

(2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) |_☐
(b) |x☒

(3) SEC Use Only.

(4) Source of Funds (See Instructions).
PF

(5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) |_☐

(6) Citizenship or Place of Organization
United States

Number of Shares Beneficially Owned by Each Reporting Person With:

- (7) Sole Voting Power:
2,700
- (8) Shared Voting Power:
0
- (9) Sole Dispositive Power:
2,700
- (10) Shared Dispositive Power:
0
- (11) Aggregate Amount Beneficially Owned by Each Reporting Person.
2,700
- (12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). ☐
- (13) Percent of Class Represented by Amount in Row (11).
0.0%
- (14) Type of Reporting Person (See Instructions).
IN

- (1) Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

Kovner, Bruce
- (2) Check the Appropriate Box if a Member of a Group (See Instructions) (a) ☐
(b) ☒
- (3) SEC Use Only.
- (4) Source of Funds (See Instructions).
AF,PF
- (5) Check if Disclosure of Legal Proceedings is Required Pursuant to Items
2(d) or 2(e) ☐
- (6) Citizenship or Place of Organization
United States

Number of Shares Beneficially Owned by Each Reporting Person With:

- (7) Sole Voting Power:
5,001,875
- (8) Shared Voting Power:
9,661,716
- (9) Sole Dispositive Power:
5,001,875
- (10) Shared Dispositive Power:
9,661,716
- (11) Aggregate Amount Beneficially Owned by Each Reporting Person.
14,663,591
- (12) Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(see instructions). ☐
- (13) Percent of Class Represented by Amount in Row (11).
25.4%
- (14) Type of Reporting Person (See Instructions).
IN

Item 3. Source and Amount of Funds or Other Consideration

Item 3 is hereby amended by adding the following thereto:

Mr. Kovner has expended, in aggregate, approximately \$36,763,958 (excluding commissions, if any) to acquire 7,272,816 shares of Synta Pharmaceuticals Corp. The purchase price for the shares of Common Stock acquired by Mr. Kovner was paid out of Mr. Kovner's personal funds. 52,372 of the outstanding shares of Common Stock directly owned by Mr. Kovner were issued to Mr. Kovner as compensation for his service on the Company's Board of Directors or certain of its committees. Mr. Kovner also was granted 76,687 options on the Common Stock of the Company as compensation in connection with his service on the Company's Board of Directors.

Mr. David Ben-Ur has expended, in aggregate, approximately \$14,678 (excluding commissions) to acquire 2,700 shares of the Company.

Each of the trusts listed herein have received their respective shares of Common Stock of the Company as gifts from Mr. Kovner.

Item 5. Interest in Securities of the Issuer

Subparagraph (a), (b) and (c) of Item 5 of the Schedule 13D is hereby amended and replaced by the following:

- (a) (i) CxSynta LLC beneficially owns 7,761,716 shares of Common Stock, representing approximately 13.5% of the 57,639,108 shares of Common Stock reported to be outstanding as of April 30, 2012, as reported in the Company's Form 10-Q filed with the Securities Exchange Commission on May 3, 2012. The percentages used herein and in the rest of this Amendment No. 4 are calculated based upon such number of outstanding shares.
- (ii) Caxton Corporation is the managing member of CxSynta LLC and as such, has voting and dispositive power with respect to the 7,761,716 shares beneficially owned by CxSynta LLC. As a result, Caxton Corporation may be deemed to beneficially own 7,761,716 shares of Common Stock, representing approximately 13.5% of the total shares of Common Stock issued and outstanding.
- (iii) Kovner 2011-A Investment Trust beneficially owns 125,000 shares of Common Stock, representing approximately 0.2% of the total shares of Common Stock issued and outstanding.
- (iv) Kovner 2011-B Investment Trust beneficially owns 125,000 shares of Common Stock, representing approximately 0.2% of the total shares of Common Stock issued and outstanding.
- (v) Kovner 2011-C Investment Trust beneficially owns 125,000 shares of Common Stock, representing approximately 0.2% of the total shares of Common Stock issued and outstanding.
- (vi) Kovner 2011-D Investment Trust beneficially owns 125,000 shares of Common Stock, representing approximately 0.2% of the total shares of Common Stock issued and outstanding.
- (vii) Kovner 2012-A Synta Investment Trust beneficially owns 475,000 shares of Common Stock, representing approximately 0.8% of the total shares of Common Stock issued and outstanding.
- (viii) Kovner 2012-B Synta Investment Trust beneficially owns 475,000 shares of Common Stock, representing approximately 0.8% of the total shares of Common Stock issued and outstanding.
- (ix) Kovner 2012-C Synta Investment Trust beneficially owns 475,000 shares of Common Stock, representing approximately 0.8% of the total shares of Common Stock issued and outstanding.
- (x) Kovner 2012-D Synta Investment Trust beneficially owns 475,000 shares of Common Stock, representing approximately 0.8% of the total shares of Common Stock issued and outstanding.
- (xi) Mr. Ben-Ur is the Chief Investment Officer of Caxton Alternative Management LP and has sole beneficial ownership of 2,700 shares of Common Stock, representing approximately 0.0% of the total shares of Common Stock issued and outstanding.

(xii) Mr. Kovner has sole beneficial ownership of 5,001,875 shares of Common Stock, which includes options to purchase 76,687 shares of Common Stock upon the exercise of such options. In addition, Mr. Kovner is the Chairman and sole shareholder of Caxton Corporation, the managing member of CxSynta LLC, and as a result may be deemed to beneficially own the securities of the Company owned by CxSynta LLC. Mr. Kovner is the sole trustee of each of the following trusts and as a result may be deemed to beneficially own the 1,900,000 securities of the Company owned by such trusts in aggregate: Kovner 2012-A Synta Investment Trust; Kovner 2012-B Synta Investment Trust; Kovner 2012-C Synta Investment Trust; and Kovner 2012-D Synta Investment Trust. Mr. Kovner disclaims beneficial ownership of the shares of Common Stock owned directly by CxSynta LLC except to the extent of his pecuniary interest therein. Mr. Kovner also disclaims beneficial ownership of the shares of Common Stock directly owned by such trusts. As a result of the foregoing, Mr. Kovner may be deemed to beneficially own an aggregate of 14,663,591 shares of Common Stock, representing approximately 25.4% of the total shares of Common Stock issued and outstanding.

(b) Caxton Corporation and Mr. Kovner, as Chairman and sole shareholder of Caxton Corporation, the managing member of CxSynta LLC, may be deemed to share voting and dispositive power over 7,761,716 shares of Common Stock owned directly by CxSynta LLC. Cadence Trust Company, the Trustee of each of the following trusts, has sole voting and dispositive power over the aggregate 500,000 shares of Common Stock owned directly by each of such Trusts: Kovner 2011-A Investment Trust, Kovner 2011-B Investment Trust, Kovner 2011-C Investment Trust, and Kovner 2011-D Investment Trust. While Mr. Kovner is a director of Cadence Trust Company and, as such, may be deemed to not have beneficial ownership over the shares of the Company held by the trusts for which Cadence Trust Company serves as Trustee, disclosure of such relationship and ownership is being made herein. Mr. Ben-Ur has sole voting and dispositive power over the 2,700 shares of Common Stock owned directly by him. Mr. Kovner also may be deemed to share voting and dispositive power with respect to the 1,900,000 shares of Common Stock of the Company that are owned by each of the following trusts, as Mr. Kovner is the Trustee of such Trusts: Kovner 2012-A Synta Investment Trust, Kovner 2012-B Synta Investment Trust, Kovner 2012-C Synta Investment Trust, and Kovner 2012-D Synta Investment Trust. In addition, Mr. Kovner has sole voting and dispositive power with respect to the 5,001,875 shares of Common Stock which he directly beneficially owns.

(c) On June 29, 2012, Mr. Kovner purchased 910,000 shares of Common Stock at a weighted average purchase price of \$5.4498 per share. On June 29, 2012, Mr. Ben-Ur purchased 2,700 shares of Common Stock of the Company at an average cost of \$5.45. On June 29, 2012, Mr. Kovner transferred, as gifts, 475,000 shares of Common Stock of the Company to each of the following trusts (for an aggregate 1,900,000 shares of Common Stock of the Company): Kovner 2012-A Synta Investment Trust, Kovner 2012-B Synta Investment Trust, Kovner 2012-C Synta Investment Trust, and Kovner 2012-D Synta Investment Trust. On July 1, 2012, Mr. Kovner received shares of Common Stock of the Company in the amounts of (a) 7,312, (b) 914, and (c) 914, and 10,000 options on Common Stock of the Company, as compensation for his service on the Company's Board of Directors or on certain of its committees.

Except as reported in this statement on Schedule 13D, the Reporting Persons are not believed to have engaged in any other transactions in the Company's securities in the past sixty (60) days.

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

Item 6 is hereby amended by adding the following thereto:

The information contained in Item 5 of this Amendment No.4 is incorporated by reference.

Mr. Ben-Ur serves as Chief Investment Officer of Caxton Alternative Management LP, an entity indirectly controlled by Mr. Kovner and as such has agreed, during the course of his employment with Caxton Alternative Management LP, to abide by certain policies and procedures applicable to Mr. Kovner as a director of the Company. By reason of this agreement,

Mr. Kovner and Mr. Ben-Ur may be deemed to be members of a group. Mr. Kovner, Mr. Ben-Ur and all other Reporting Persons named herein, expressly disclaim beneficial ownership of the Common Stock of the other Reporting Persons except to the extent they may have an interest in such other Reporting Person.

Except as set forth above, there are no contracts, arrangements, understandings or relationships (legal or otherwise) among the persons filing this Report or the Listed Persons or between such persons and any other person with respect to any securities of the Company, including, but not limited to transfer or voting of any of the securities, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of profits, division of profits or losses, or the giving or withholding of proxies.

Item 7. Material to Be Filed as Exhibits

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.

CxSynta LLC

Date: 07/03/2012 By Caxton Corporation, Managing Member
of CxSynta LLC,
by /s/ Scott B. Bernstein,
Secretary of Caxton Corporation
Caxton Corporation

Date: 07/03/2012 /s/ Scott B. Bernstein, Secretary of
Caxton Corporation

Date: 07/03/2012 Kovner 2011-A Investment Trust
/s/ Peter P. D'Angelo, President of
Cadence Trust Company, Trustee

Date: 07/03/2012 Kovner 2011-B Investment Trust
/s/ Peter P. D'Angelo, President of
Cadence Trust Company, Trustee

Date: 07/03/2012 Kovner 2011-C Investment Trust
/s/ Peter P. D'Angelo, President of
Cadence Trust Company, Trustee

Date: 07/03/2012 Kovner 2011-D Investment Trust
/s/ Peter P. D'Angelo, President of
Cadence Trust Company, Trustee

Date: 07/03/2012 Kovner 2012-A Synta Investment Trust
/s/ Bruce S. Kovner, Trustee

Date: 07/03/2012 Kovner 2012-B Synta Investment Trust
/s/ Bruce S. Kovner, Trustee

Date: 07/03/2012 Kovner 2012-C Synta Investment Trust
/s/ Bruce S. Kovner, Trustee

Date: 07/03/2012 Kovner 2012-D Synta Investment Trust
/s/ Bruce S. Kovner, Trustee

Date: 07/03/2012 David Ben-Ur

/s/ David Ben-Ur

Bruce S. Kovner

Date: 07/03/2012 /s/ Bruce S. Kovner

The original statement shall be signed by each person on whose behalf the statement is filed or his authorized representative. If the statement is signed on behalf of a person by his authorized representative (other than an executive officer or general partner of the filing person), evidence of the representative's authority to sign on behalf of such person shall be filed with the statement: provided, however, that a power of attorney for this purpose which is already on file with the Commission may be incorporated by reference. The name and any title of each person who signs the statement shall be typed or printed beneath his signature.

ATTENTION: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001).