Bacterin International Holdings, Inc.
Form SC 13G/A
February 14, 2014

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

SCHEDULE 13G
(Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT
TO RULES 13d-1(b)(c), AND (d) AND AMENDMENTS THERETO FILED
PURSUANT TO RULE 13d-2(b)

(Amendment No. 1) *

Bacterin International Holdings, Inc.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

05644R101

(CUSIP Number)

December 31, 2013

(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)

x Rule 13d-1(c)

¨ Rule 13d-1(d)

(Page 1 of 10 Pages)

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* 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 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
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Mgmt, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) o (b) ý

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 1,268,989 (1)
	7.	SOLE DISPOSITIVE POWER 0
	8.	SHARED DISPOSITIVE POWER 1,268,989 (1)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,268,989 (1)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES* ¨

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

2.41%

12. TYPE OF REPORTING PERSON*

PN

(1) Comprised of an aggregate of 391,796 shares of common stock and warrants to purchase an aggregate of 877,193 shares of common stock held by Deerfield Special Situations Fund, L.P. and Deerfield Special Situations International Master Fund, L.P., of which Deerfield Mgmt, L.P. is the general partner.

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Management Company, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) o (b) ý

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 1,268,989 (2)
	7.	SOLE DISPOSITIVE POWER 0
	8.	SHARED DISPOSITIVE POWER 1,268,989 (2)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,268,989 (2)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES* ¨

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

2.41%

12. TYPE OF REPORTING PERSON*

PN

(2) Comprised of an aggregate of 391,796 shares of common stock and warrants to purchase an aggregate of 877,193 shares of common stock held by Deerfield Special Situations Fund, L.P. and Deerfield Special Situations International Master Fund, L.P., of which Deerfield Management Company, L.P. is the investment advisor.

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Special Situations Fund, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) o (b) ý

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

693,353 (3)

7. SOLE DISPOSITIVE POWER

0

8. SHARED DISPOSITIVE POWER

693,353 (3)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

693,353 (3)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES* ¨

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

1.33%

12. TYPE OF REPORTING PERSON*

PN

(3) Includes warrants to purchase 478,070 shares of common stock.

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Deerfield Special Situations International Master Fund, L.P.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) o (b) ý

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

British Virgin Islands

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH		
	5.	SOLE VOTING POWER 0
	6.	SHARED VOTING POWER 575,636 (4)
	7.	SOLE DISPOSITIVE POWER 0
	8.	SHARED DISPOSITIVE POWER 575,636 (4)

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

575,636 (4)

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES* ¨

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

1.10%

12. TYPE OF REPORTING PERSON*

PN

(4) Includes warrants to purchase 399,123 shares of common stock.

1.	NAME OF REPORTING PERSONS I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY) James E. Flynn		
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*		(a) o (b) ý
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 1,268,989 (5)	
	7.	SOLE DISPOSITIVE POWER 0	
	8.	SHARED DISPOSITIVE POWER 1,268,989 (5)	
9.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,268,989 (5)		
10.	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES*		¨
11.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 2.41%		
12.	TYPE OF REPORTING PERSON* IN		

(5) Comprised of an aggregate of 391,796 shares of common stock and warrants to purchase an aggregate of 877,193 shares of common stock held by Deerfield Special Situations Fund, L.P. and Deerfield Special Situations International Master Fund, L.P.

Item 1(a). Name of Issuer:

Bacterin International Holdings, Inc.

Item 1(b). Address of Issuer's Principal Executive Offices:

600 Cruiser Lane
Belgrade, Montana 59714

Item 2(a). Name of Person Filing:

James E. Flynn, Deerfield Mgmt, L.P., Deerfield Management Company, L.P., Deerfield Special Situations Fund, L.P., Deerfield Special Situations International Master Fund, L.P.

Item 2(b). Address of Principal Business Office, or if None, Residence:

780 Third Avenue, 37th Floor, New York, NY 10017

Item 2(c). Citizenship:

Deerfield Mgmt, L.P., Deerfield Management Company, L.P., Deerfield Special Situations Fund, L.P. - Delaware limited partnerships

Deerfield Special Situations International Master Fund, L.P. – British Virgin Islands limited partnership

James E. Flynn - United States citizen

Item 2(d). Title of Class of Securities:

Common Stock

Item 2(e). CUSIP Number:

05644R101

Item 3. If This Statement is Filed Pursuant to Rule 13d-1(b), or 13d-2(b) or (c), Check Whether the

Person Filing is a:

(a) o Broker or dealer registered under Section 15 of the Exchange Act.

(b) o Bank as defined in Section 3(a)(6) of the Exchange Act.

(c) o Insurance company as defined in Section 3(a)(19) of the Exchange Act.

(d) o Investment company registered under Section 8 of the Investment Company Act.

(e) o An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);

(f) o An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);

(g) o A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G);

(h) o A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act;

(i) o A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act;

(j) o A non-U.S. institution in accordance with Rule 13d-1(b)(1)(ii)(J);

(k) o Group, in accordance with Rule 13d-1(b)(1)(ii)(K).

If filing as a non-U.S. institution in accordance with Rule 13d-1(b)(1)(ii)(J), please specify the type of institution:
_____

Item 4. Ownership.

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

(a) Amount beneficially owned**:

Deerfield Mgmt, L.P. – 1,268,989 shares
Deerfield Management Company, L.P. – 1,268,989 shares
Deerfield Special Situations Fund, L.P. – 693,353 shares
Deerfield Special Situations International Master Fund, L.P. - 575,636 shares
James E. Flynn – 1,268,989 shares

(b) Percent of class**:

Deerfield Mgmt, L.P. – 2.41%
Deerfield Management Company, L.P. – 2.41%
Deerfield Special Situations Fund, L.P. – 1.33%
Deerfield Special Situations International Master Fund, L.P. - 1.10%
James E. Flynn – 2.41%

(c) Number of shares as to which such person has**:

(i)	Sole power to vote or to direct the vote	All Reporting Persons - 0
(ii)	Shared power to vote or to direct the vote	Deerfield Mgmt, L.P. – 1,268,989 Deerfield Management Company, L.P. – 1,268,989 Deerfield Special Situations Fund, L.P. – 693,353 Deerfield Special Situations International Master Fund, L.P. – 575,636 James E. Flynn - 1,268,989
(iii)	Sole power to dispose or to direct the disposition of	All Reporting Persons - 0
(iv)	Shared power to dispose or to direct the disposition of	Deerfield Mgmt, L.P. – 1,268,989 Deerfield Management Company, L.P. –

1,268,989
Deerfield Special Situations Fund, L.P. – 693,353
Deerfield Special Situations International Master Fund, L.P. – 575,636
James E. Flynn - 1,268,989

**See footnotes on cover pages which are incorporated by reference herein.

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 x.

Item 6. Ownership of More Than Five Percent on Behalf of Another Person.

If any other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such securities, a statement to that effect should be included in response to this item and, if such interest relates to more than five percent of the class, such person should be identified. A listing of the shareholders of an investment company registered under the Investment Company Act of 1940 or the beneficiaries of employee benefit plan, pension fund or endowment fund is not required.

N/A

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company or Control Person.

If a parent holding company or Control person has filed this schedule, pursuant to Rule 13d-1(b)(1)(ii)(G), so indicate under Item 3(g) and attach an exhibit stating the identity and the Item 3 classification of the relevant subsidiary. If a parent holding company or control person has filed this schedule pursuant to Rule 13d-1(c) or Rule 13d-1(d), attach an exhibit stating the identification of the relevant subsidiary.

N/A

Item 8. Identification and Classification of Members of the Group.

If a group has filed this schedule pursuant to ss.240.13d-1(b)(1)(ii)(J), so indicate under Item 3(j) and attach an exhibit stating the identity and Item 3 classification of each member of the group. If a group has filed this schedule pursuant to ss.240.13d-1(c) or ss.240.13d-1(d), attach an exhibit stating the identity of each member of the group.

See Exhibit B

Item 9. Notice of Dissolution of Group.

Notice of dissolution of a group may be furnished as an exhibit stating the date of the dissolution and that all further filings with respect to transactions in the security reported on will be filed, if required, by members of the group, in their individual capacity. See Item 5.

N/A

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.

DEERFIELD MGMT, L.P.

By: J.E. Flynn Capital LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD MANAGEMENT COMPANY, L.P.

By: Flynn Management LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS FUND, L.P.

By: Deerfield Mgmt, L.P., General Partner

By: J.E. Flynn Capital LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS INTERNATIONAL MASTER FUND, L.P.

By: Deerfield Mgmt, L.P., General Partner

By: J.E. Flynn Capital LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

JAMES E. FLYNN

/s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

Date: February 14, 2014

Exhibit List

Exhibit A. Joint Filing Agreement.

Exhibit B. Item 8 Statement.

Exhibit C (1). Power of Attorney.

(1) Power of Attorney previously filed as Exhibit 24 to a Form 4 with regard to Talon Therapeutics, Inc. filed with the Securities and Exchange Commission on August 21, 2012 by Deerfield Mgmt L.P., Deerfield Management Company, L.P., Deerfield Special Situations Fund, L.P., Deerfield Special Situations Fund International, Limited, Deerfield Private Design Fund, L.P., Deerfield Private Design International, L.P. and James E. Flynn.

Exhibit A
Agreement

The undersigned agree that this Schedule 13G, and all amendments thereto, relating to the Common Stock of Bacterin International Holdings, Inc. shall be filed on behalf of the undersigned.

DEERFIELD MGMT, L.P.

By: J.E. Flynn Capital LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD MANAGEMENT COMPANY, L.P.

By: Flynn Management LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS FUND, L.P.

By: Deerfield Mgmt, L.P., General Partner

By: J.E. Flynn Capital LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

DEERFIELD SPECIAL SITUATIONS INTERNATIONAL MASTER FUND, L.P.

By: Deerfield Mgmt, L.P., General Partner

By: J.E. Flynn Capital LLC, General Partner

By: /s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

JAMES E. FLYNN

/s/ Jonathan Isler
Jonathan Isler, Attorney-In-Fact

Exhibit B

Due to the relationships between them, the reporting persons hereunder may be deemed to constitute a “group” with one another for purposes of Section 13(d)(3) of the Securities Exchange Act of 1934.