

Bacterin International Holdings, Inc.
Form SC 13G/A
April 10, 2014

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

SCHEDULE 13G/A

Under the Securities Exchange Act of 1934

(Amendment No. 1)*

Bacterin International Holdings, Inc.
(Name of Issuer)

Common Stock
(Title of Class of Securities)

05644R101
(CUSIP Number)

March 31, 2014
(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 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 ("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).

CUSIP No. 05644R101

SCHEDULE 13G/A

Page 2 of 8 Pages

NAME OF REPORTING PERSONS

1

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

OrbiMed Advisors LLC

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)

2

(a)

(b)

SEC USE ONLY

3

CITIZENSHIP OR PLACE OF ORGANIZATION

4

Delaware

SOLE VOTING POWER

5

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON

SHARED VOTING POWER

6

5,631,579

SOLE DISPOSITIVE POWER

7

0

WITH

SHARED DISPOSITIVE POWER

8

5,631,579

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

5,631,579

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN
SHARES (See Instructions)

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

10.10%

TYPE OF REPORTING PERSON (See Instructions)

12

IA

CUSIP No. 05644R101

SCHEDULE 13G/A

Page 3 of 8 Pages

NAME OF REPORTING PERSONS

1

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

Samuel D. Isaly

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)

2

(a)

(b)

SEC USE ONLY

3

CITIZENSHIP OR PLACE OF ORGANIZATION

4

United States

SOLE VOTING POWER

5

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON

SHARED VOTING POWER

6

5,631,579

SOLE DISPOSITIVE POWER

7

0

WITH

SHARED DISPOSITIVE POWER

8

5,631,579

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

5,631,579

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN
SHARES (See Instructions)

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

10.10%

TYPE OF REPORTING PERSON (See Instructions)

12

HC

CUSIP No. 05644R101

SCHEDULE 13G/A

Page 4 of 8 Pages

Item 1. (a) Name of Issuer:

Bacterin International Holdings, Inc.

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

600 Cruiser Lane

Belgrade, Montana 59714

Item 2.

(a) Name of Person Filing:

OrbiMed Advisors LLC ("Advisors")

Samuel D. Isaly ("Isaly")

(b) Address of Principal Business Office:

601 Lexington Avenue, 54th Floor

New York, NY 10022

(c) Citizenship:

Please refer to Item 4 on each cover sheet for each filing person.

(d) Title of Class of Securities:

Common Stock

(e) CUSIP No.:

05644R101

CUSIP No. 05644R101

SCHEDULE 13G/A

Page 5 of 8 Pages

Item 3.

Advisors is an investment adviser in accordance with 240.13d-1(b)(1)(ii)(E) and serves as the investment manager of Royalty Opportunities S.ar.l ("ROS"), which beneficially owns the shares of the Issuer's Common Stock ("Shares"), as detailed in Item 6. Isaly is the Managing Member of Advisors and a control person in accordance with 240.13d-1(b)(1)(ii)(G).

CUSIP No. 05644R101

SCHEDULE 13G/A

Page 6 of 8 Pages

Item 4. Ownership:

Please see Items 5 - 9 and 11 for each cover sheet for each filing.

Item 5. Ownership of Five Percent or Less of a Class.

Not Applicable.

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

Advisors is the investment manager of ROS, which beneficially owns 4,754,386 Shares and a warrant to purchase 877,193 Shares. Isaly is the Managing Member of Advisors. On the basis of these relationships, Advisors and Isaly may be deemed to share beneficial ownership of the Shares directly owned by ROS.

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. Certification.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and held in the ordinary course of business and 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.

CUSIP No. 05644R101

SCHEDULE 13G/A

Page 7 of 8 Pages

SIGNATURES

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 10, 2014

ORBIMED ADVISORS LLC

By: Samuel D. Isaly
Name: Samuel D. Isaly
Title: Managing Member

By: Samuel D. Isaly
Name: Samuel D. Isaly

EXHIBIT A

JOINT FILING AGREEMENT

The undersigned hereby agree that the Statement on this Schedule 13G/A dated April 10, 2014 (the "Schedule 13G/A"), with respect to the Common Stock, par value of \$0.000001 per share, of Bacterin International Holdings, Inc. is filed on behalf of each of us pursuant to and in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, and that this Agreement shall be included as an Exhibit to this Schedule 13G/A. Each of the undersigned agrees to be responsible for the timely filing of the Schedule 13G/A, and for the completeness and accuracy of the information concerning itself contained therein. This Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of April 10, 2014.

ORBIMED ADVISORS LLC

By: Samuel D. Isaly
Name: Samuel D. Isaly
Title: Managing Member

By: Samuel D. Isaly
Name: Samuel D. Isaly

The Statement on this Schedule 13G/A dated April 10, 2014 with respect to the Common Stock, par value of \$0.000001 per share, of Bacterin International Holdings, Inc. is filed by Samuel D. Isaly in accordance with the provisions of Rule 13d-1(b) and Rule 13d-1(k), respectively, as control person (HC) of OrbiMed Advisors LLC.

OrbiMed Advisors LLC files this statement on Schedule 13G/A in accordance with the provisions of Rule 13d-1(b) and Rule 13d-1(k), respectively, as an investment advisor (IA). OrbiMed Advisors LLC serves as the investment

manager of Royalty Opportunities S. àr.l, which beneficially owns the shares of Bacterin International Holdings, Inc., as detailed in Item 6.