

INFINITY PHARMACEUTICALS, INC.

Form SC 13G/A

February 13, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

SCHEDULE 13G/A

Under the Securities Exchange Act of 1934

(Amendment No. 4)*

Infinity Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

45665G303

(CUSIP Number)

December 31, 2016

(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. 45665G303

SCHEDULE 13G/A

Page 2 of 9 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

6

SHARED VOTING POWER

1,064,000

SOLE DISPOSITIVE POWER

WITH

7

0

SHARED DISPOSITIVE POWER

8

1,064,000

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

1,064,000

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

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

2.14%

TYPE OF REPORTING PERSON (See Instructions)

12

IA

CUSIP No. 45665G303

SCHEDULE 13G/A

Page 3 of 9 Pages

NAME OF REPORTING PERSONS

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

1

OrbiMed Capital 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

2,186,300

SOLE DISPOSITIVE POWER

7

0

WITH

SHARED DISPOSITIVE POWER

8

2,186,300

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

2,186,300

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

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

4.40%

TYPE OF REPORTING PERSON (See Instructions)

12

IA

CUSIP No. 45665G303

SCHEDULE 13G/A

Page 4 of 9 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

3,250,300

SOLE DISPOSITIVE POWER

7

0

WITH

SHARED DISPOSITIVE POWER

8

3,250,300

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

3,250,300

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

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

6.54%

TYPE OF REPORTING PERSON (See Instructions)

12

HC

CUSIP No. 45665G303

SCHEDULE 13G/A

Page 5 of 9 Pages

Item 1. (a) Name of Issuer:

Infinity Pharmaceuticals, Inc.

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

784 Memorial Drive

Cambridge, MA 02139

Item 2.

(a) Name of Person Filing:

OrbiMed Advisors LLC

OrbiMed Capital LLC

Samuel D. 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.:

45665G303

CUSIP No. 45665G303

SCHEDULE 13G/A

Page 6 of 9 Pages

Item 3. OrbiMed Advisors LLC and OrbiMed Capital LLC are investment advisors in accordance with ss.240.13d-1(b)(1)(ii)(E). Samuel D. Isaly is a control person in accordance with ss.240.13d-1(b)(1)(ii)(G).

CUSIP No. 45665G303

SCHEDULE 13G/A

Page 7 of 9 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.

Reporting persons are holding 6.54% (2.14% in the case of OrbiMed Advisors LLC and 4.40% in the case of OrbiMed Capital LLC) of the shares on behalf of other persons who have the right to receive or the power to direct the receipt of dividends from, or proceeds from the sale of, such securities. No one such other person's interest in the securities whose ownership is reported here relates to more than five percent of the class.

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. 45665G303

SCHEDULE 13G/A

Page 8 of 9 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: February 13, 2017

OrbiMed Advisors LLC

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

OrbiMed Capital LLC

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

Samuel D. Isaly

Samuel D. Isaly
Name: Samuel D. Isaly

CUSIP No. 45665G303

SCHEDULE 13G/A

Page 9 of 9 Pages

EXHIBIT A

JOINT FILING AGREEMENT

The undersigned hereby agree that the Statement on this Schedule 13G/A dated February 13, 2017 (the "Schedule 13G/A"), with respect to the Common Stock, par value \$0.001 per share, of Infinity Pharmaceuticals, 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 February 13, 2017.

OrbiMed Advisors LLC

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

OrbiMed Capital LLC

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

Samuel D. Isaly

Samuel D. Isaly
Name: Samuel D. Isaly

The Statement on this Schedule 13G/A dated February 13, 2017 with respect to the Common Stock of Infinity Pharmaceuticals, 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 and OrbiMed Capital LLC.

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