

INFINITY PHARMACEUTICALS, INC.
Form SC 13G/A
December 30, 2016

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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)¹

Infinity Pharmaceuticals, Inc.
(Name of Issuer)

Common Stock, \$0.001 par value
(Title of Class of Securities)

45665G 30 3
(CUSIP Number)

December 28, 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)

1 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. 45665G 30 3

1 NAME OF REPORTING PERSON

Biotechnology Value Fund, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) (b)

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 shares |
| | 6 | SHARED VOTING POWER |
| | | 3,629,958 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 shares |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 3,629,958 |

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

3,629,958

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

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

7.3%

12 TYPE OF REPORTING PERSON

PN

CUSIP NO. 45665G 30 3

1 NAME OF REPORTING PERSON

Biotechnology Value Fund II, L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) (b)

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 shares

6

SHARED VOTING POWER

2,335,849

7

SOLE DISPOSITIVE POWER

0 shares

8

SHARED DISPOSITIVE POWER

2,335,849

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

2,335,849

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

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

4.7%

12 TYPE OF REPORTING PERSON

PN

CUSIP NO. 45665G 30 3

1 NAME OF REPORTING PERSON

Biotechnology Value Trading Fund OS LP

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Cayman Islands

| | | |
|---|---|--------------------------|
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 5 | SOLE VOTING POWER |
| | | 0 shares |
| | 6 | SHARED VOTING POWER |
| | | 698,623 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 shares |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 698,623 |

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

698,623

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

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

1.4%

12 TYPE OF REPORTING PERSON

PN

CUSIP NO. 45665G 30 3

1 NAME OF REPORTING PERSON

BVF Partners OS Ltd.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) (b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Cayman Islands

| | | |
|---|---|--------------------------|
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 5 | SOLE VOTING POWER |
| | | 0 shares |
| | 6 | SHARED VOTING POWER |
| | | 698,623 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 shares |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 698,623 |

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

698,623

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

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

1.4%

12 TYPE OF REPORTING PERSON

CO

CUSIP NO. 45665G 30 3

1 NAME OF REPORTING PERSON

BVF Partners L.P.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) (b)

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 shares |
| | 6 | SHARED VOTING POWER |
| | | 7,860,808 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 shares |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 7,860,808 |

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

7,860,808

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

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

15.8%

12 TYPE OF REPORTING PERSON

PN, IA

CUSIP NO. 45665G 30 3

1 NAME OF REPORTING PERSON

BVF Inc.

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) (b)

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 shares |
| | 6 | SHARED VOTING POWER |
| | | 7,860,808 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 shares |
| | 8 | SHARED DISPOSITIVE POWER |

7,860,808

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

7,860,808

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

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

15.8%

12 TYPE OF REPORTING PERSON

CO

CUSIP NO. 45665G 30 3

1 NAME OF REPORTING PERSON

Mark N. Lampert

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) (b)

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 shares |
| | 6 | SHARED VOTING POWER |
| | | 7,860,808 |
| | 7 | SOLE DISPOSITIVE POWER |
| | | 0 shares |
| | 8 | SHARED DISPOSITIVE POWER |
| | | 7,860,808 |

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

7,860,808

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

11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

15.8%

12 TYPE OF REPORTING PERSON

IN

CUSIP NO. 45665G 30 3

Item 1(a). Name of Issuer:

Infinity Pharmaceuticals, Inc., a Delaware corporation (the "Issuer").

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

784 Memorial Drive
Cambridge, Massachusetts 02139

Item 2(a). Name of Person Filing

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

Item 2(c). Citizenship

Biotechnology Value Fund, L.P. ("BVF")

1 Sansome Street, 30th Floor
San Francisco, California 94104
Citizenship: Delaware

Biotechnology Value Fund II, L.P. ("BVF2")

1 Sansome Street, 30th Floor
San Francisco, California 94104
Citizenship: Delaware

Biotechnology Value Trading Fund OS LP ("Trading Fund OS")

PO Box 309 Uglan House
Grand Cayman, KY1-1104
Cayman Islands
Citizenship: Cayman Islands

BVF Partners OS Ltd. ("Partners OS")

PO Box 309 Uglan House
Grand Cayman, KY1-1104
Cayman Islands
Citizenship: Cayman Islands

BVF Partners L.P. ("Partners")

1 Sansome Street, 30th Floor
San Francisco, California 94104
Citizenship: Delaware

BVF Inc.

1 Sansome Street, 30th Floor
San Francisco, California 94104
Citizenship: Delaware

Mark N. Lampert ("Mr. Lampert")

1 Sansome Street, 30th Floor
San Francisco, California 94104

Citizenship: United States

Each of the foregoing is referred to as a "Reporting Person" and collectively as the "Reporting Persons."

9

CUSIP NO. 45665G 30 3

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

Common Stock, \$0.001 par value (the "Common Stock")

Item 2(e). CUSIP Number:

45665G 30 3

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: