

VICAL INC
Form SC 13G
November 17, 2017
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

Vical Incorporated
(Name of Issuer)

Common Stock, \$0.01 par value
(Title of Class of Securities)

925602203
(CUSIP Number)

November 7, 2017
(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 disclosures provided in a prior cover page.

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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	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	
		1,198,020 (1)
7	SOLE DISPOSITIVE POWER	
		0 shares
8	SHARED DISPOSITIVE POWER	
		1,198,020 (1)
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
10	1,198,020 (1)	

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

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

6.3% (1)

12 TYPE OF REPORTING
PERSON

PN

(1) Includes 498,431 shares of Common Stock currently issuable upon the exercise of certain warrants. As of November 17, 2017, the warrant exercise limitation described in the next sentence limits the aggregate exercise of warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the warrants owned by the Reporting Persons in the aggregate. The warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own in the aggregate, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, more than 9.99% of the number of shares of Common Stock then issued and outstanding. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation. See Item 4(a) for a full description of the Reporting Person's beneficial ownership.

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

447,343 (1)

7 SOLE DISPOSITIVE POWER

8 SHARED DISPOSITIVE POWER

447,343 (1)

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

10 CHECK BOX IF THE AGGREGATE

447,343 (1)

AMOUNT IN ROW
(9) EXCLUDES
CERTAIN
SHARES

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

2.4% (1)

12 TYPE OF REPORTING
PERSON

PN

(1) Excludes 2,296,089 shares of Common Stock not issuable upon the exercise of certain warrants due to the warrant exercise limitation. As of November 17, 2017, the warrant exercise limitation described in the next sentence limits the aggregate exercise of warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the warrants owned by the Reporting Persons in the aggregate. The warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own in the aggregate, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, more than 9.99% of the number of shares of Common Stock then issued and outstanding. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation. See Item 4(a) for a full description of the Reporting Person's beneficial ownership.

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	
5	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	Cayman Islands SOLE VOTING POWER 0 shares SHARED VOTING POWER 119,971 (1) SOLE DISPOSITIVE POWER 0 shares SHARED DISPOSITIVE POWER 119,971 (1)
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	119,971 (1)

10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)
12	Less than 1% (1) TYPE OF REPORTING PERSON
	PN

(1) Excludes 615,779 shares of Common Stock not issuable upon the exercise of certain warrants due to the warrant exercise limitation. As of November 17, 2017, the warrant exercise limitation described in the next sentence limits the aggregate exercise of warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the warrants owned by the Reporting Persons in the aggregate. The warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own in the aggregate, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, more than 9.99% of the number of shares of Common Stock then issued and outstanding. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation. See Item 4(a) for a full description of the Reporting Person's beneficial ownership.

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	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	Cayman Islands SOLE VOTING POWER
		0 shares
6	SHARED VOTING POWER	
		119,971 (1)
7	SOLE DISPOSITIVE POWER	
		0 shares
8	SHARED DISPOSITIVE POWER	
		119,971 (1)
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
10	119,971 (1)	

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

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

Less than 1% (1)

12 TYPE OF REPORTING
PERSON

CO

(1) Excludes 615,779 shares of Common Stock not issuable upon the exercise of certain warrants due to the warrant exercise limitation. As of November 17, 2017, the warrant exercise limitation described in the next sentence limits the aggregate exercise of warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the warrants owned by the Reporting Persons in the aggregate. The warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own in the aggregate, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, more than 9.99% of the number of shares of Common Stock then issued and outstanding. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation. See Item 4(a) for a full description of the Reporting Person's beneficial ownership.

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

1,907,875 (1)

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

1,907,875 (1)

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

10 CHECK BOX IF THE AGGREGATE

1,907,875 (1)

AMOUNT IN ROW
(9) EXCLUDES
CERTAIN
SHARES

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

9.99% (1)

12 TYPE OF REPORTING
PERSON

PN, IA

(1) Includes 498,431 shares of Common Stock currently issuable upon the exercise of certain warrants. Excludes 6,735,854 shares of Common Stock not issuable upon the exercise of certain warrants due to the warrant exercise limitation. As of November 17, 2017, the warrant exercise limitation described in the next sentence limits the aggregate exercise of warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the warrants owned by the Reporting Persons in the aggregate. The warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own in the aggregate, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, more than 9.99% of the number of shares of Common Stock then issued and outstanding. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation. See Item 4(a) for a full description of the Reporting Person's beneficial ownership.

1 NAME OF REPORTING PERSON

BVF Inc.
 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

2 (a)

(b)

3 SEC USE ONLY

4 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

5 NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

SOLE VOTING POWER

0 shares

6 SHARED VOTING POWER

1,907,875 (1)

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

1,907,875 (1)

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

10 1,907,875 (1)
 CHECK BOX IF THE AGGREGATE

AMOUNT IN ROW
(9) EXCLUDES
CERTAIN
SHARES

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

9.99% (1)

12 TYPE OF REPORTING
PERSON

CO

(1) Includes 498,431 shares of Common Stock currently issuable upon the exercise of certain warrants. Excludes 6,735,854 shares of Common Stock not issuable upon the exercise of certain warrants due to the warrant exercise limitation. As of November 17, 2017, the warrant exercise limitation described in the next sentence limits the aggregate exercise of warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the warrants owned by the Reporting Persons in the aggregate. The warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own in the aggregate, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, more than 9.99% of the number of shares of Common Stock then issued and outstanding. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation. See Item 4(a) for a full description of the Reporting Person's beneficial ownership.

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

5 NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

SOLE VOTING POWER

0 shares

6 SHARED VOTING POWER

1,907,875

(1)

7 SOLE DISPOSITIVE POWER

0 shares

8 SHARED DISPOSITIVE POWER

1,907,875

(1)

9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,907,875 (1)

10 CHECK BOX IF THE AGGREGATE

AMOUNT IN ROW
(9) EXCLUDES
CERTAIN
SHARES

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

9.99% (1)

12 TYPE OF REPORTING
PERSON

IN

(1) Includes 498,431 shares of Common Stock currently issuable upon the exercise of certain warrants. Excludes 6,735,854 shares of Common Stock not issuable upon the exercise of certain warrants due to the warrant exercise limitation. As of November 17, 2017, the warrant exercise limitation described in the next sentence limits the aggregate exercise of warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the warrants owned by the Reporting Persons in the aggregate. The warrants may not be exercised if, after such exercise, the Reporting Persons would beneficially own in the aggregate, as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, more than 9.99% of the number of shares of Common Stock then issued and outstanding. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation. See Item 4(a) for a full description of the Reporting Person's beneficial ownership.

Item 1(a).

Name of Issuer:

Vical Incorporated, a Delaware corporation (the "Issuer").

Item 1(b).

Address of Issuer's Principal Executive Offices:

10390 Pacific Center Court

San Diego, California 92121

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 Ugland House

Grand Cayman, KY1-1104

Cayman Islands

Citizenship: Cayman Islands

BVF Partners OS Ltd. (“Partners OS”)

PO Box 309 Ugland 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.”

Item 2(d).

Title of Class of Securities:

Common Stock, \$0.01 par value (the "Common Stock")

Item 2(e).

CUSIP Number:

925602203

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:

/x/Not applicable.

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

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

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

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

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

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

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

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

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

(j) // Group, in accordance with Rule 13d-1(b)(1)(ii)(J).

(k) // Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K). If filing as a non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J), please specify the type of institution: _____

Item 4.

Ownership

(a) Amount beneficially owned:

As of the close of business on November 17, 2017, the Reporting Persons hold 7,234,285 warrants, exercisable for an aggregate of 7,234,285 shares of Common Stock (the "Warrants"). Such Warrants have an initial exercise price of \$0.01 per Share, subject to adjustment pursuant to the terms of the Warrants. The Warrants are only exercisable to the extent that the holder, together with its affiliates and any other person or entity acting as a group, would not beneficially own more than 9.99% of the outstanding Common Stock after giving effect to such exercise, as such percentage ownership is determined in accordance with the terms of the Warrants (the "Beneficial Ownership Limitation"). As of November 17, 2017, the warrant exercise limitation described in the prior sentence limits the aggregate exercise of the Warrants by the Reporting Persons to 498,431 out of the 7,234,285 shares of Common Stock underlying the Warrants owned by the Reporting Persons in the aggregate. In providing beneficial ownership described herein, the Reporting Persons have assumed 498,431 of the 3,590,789 warrants owned by BVF would be exercised. BVF2 holds warrants to purchase 2,296,089 additional shares which are excluded herein as a result of the 9.99% limitation. BVTOS holds warrants to purchase 615,779 additional shares which are excluded herein as a result of the 9.99% limitation. The Reporting Persons through certain managed accounts holds warrants to purchase 731,628 additional shares which are excluded herein as a result of the 9.99% limitation.

As of the close of business on November 17, 2017 (i) BVF beneficially owned 1,198,020 shares of Common Stock, (ii) BVF2 beneficially owned 447,343 shares of Common Stock, and (iii) Trading Fund OS beneficially owned 119,971 shares of Common Stock.

Partners OS, as the general partner of Trading Fund OS, may be deemed to beneficially own the 119,971 shares of Common Stock beneficially owned by Trading Fund OS.

Partners, as the general partner of BVF, BVF2, the investment manager of Trading Fund OS, and the sole member of Partners OS, may be deemed to beneficially own the 1,907,875 shares of Common Stock beneficially owned in the aggregate by BVF, BVF2, Trading Fund OS, and certain Partners managed accounts (the "Partners Managed Accounts"), including 142,541 shares of Common Stock held in the Partners Managed Accounts.

BVF Inc., as the general partner of Partners, may be deemed to beneficially own the 1,907,875 shares of Common Stock beneficially owned by Partners.

Mr. Lampert, as a director and officer of BVF Inc., may be deemed to beneficially own the 1,907,875 shares of Common Stock beneficially owned by BVF Inc.

The foregoing should not be construed in and of itself as an admission by any Reporting Person as to beneficial ownership of any shares of Common Stock owned by another Reporting Person. Partners OS disclaims beneficial ownership of the shares of Common Stock beneficially owned by Trading Fund OS. Each of Partners, BVF Inc. and Mr. Lampert disclaims beneficial ownership of the shares of Common Stock beneficially owned by BVF, BVF2, Trading Fund OS, and the Partners Managed Accounts, and the filing of this statement shall not be construed as an admission that any such person or entity is the beneficial owner of any such securities.

(b)

Percent of class:

The following percentages are based on a denominator which is the sum of: (i) 18,599,409 shares of Common Stock outstanding, as disclosed in the Issuer's Prospectus filed with the Securities and Exchange Commission on November 9, 2017 and (ii) certain of the 7,234,285 shares of Common Stock underlying certain Warrants, as applicable.

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As of the close of business on November 17, 2017 (i) BVF beneficially owned approximately 6.3% of the outstanding shares of Common Stock, (ii) BVF2 beneficially owned approximately 2.4% of the outstanding shares of Common Stock, (iii) Trading Fund OS beneficially owned less than 1% of the outstanding shares of Common Stock, (iv) Partners OS may be deemed to beneficially own less than 1% of the outstanding shares of Common Stock, and (v) each of Partners, BVF Inc. and Mr. Lampert may be deemed to beneficially own approximately 9.99% of the outstanding shares of Common Stock (less than 1% of which is held in the Partners Managed Accounts).

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

(i) Sole power to vote or to direct the vote

See Cover Pages Items 5-9.

(ii) Shared power to vote or to direct the vote

See Cover Pages Items 5-9.

(iii) Sole power to dispose or to direct the disposition of

See Cover Pages Items 5-9.

(iv) Shared power to dispose or to direct the disposition of

See Cover Pages Items 5-9.

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.

Partners, BVF Inc. and Mr. Lampert share voting and dispositive power over the shares of Common Stock beneficially owned by BVF, BVF2, Trading Fund OS, and the Partners Managed Accounts.

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

Not Applicable.

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

See Exhibit 99.1.

Item 9. Notice of Dissolution of Group.

Not Applicable.

Item 10. Certifications.

By signing below each of the undersigned certifies that, to the best of its 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.

SIGNATURE

After reasonable inquiry and to the best of his knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

Dated: November 17, 2017

BIOTECHNOLOGY VALUE FUND, L.P.

By: BVF Partners L.P., its general partner

By: BVF Inc., its general partner

By: /s/ Mark N. Lampert

Mark N. Lampert

President

BVF INC.

/s/ Mark N. Lampert

By: Mark N. Lampert

President

/s/ Mark N. Lampert

MARK N. LAMPERT

BIOTECHNOLOGY VALUE FUND II, L.P.

By: BVF Partners L.P., its general partner

By: BVF Inc., its general partner

By: /s/ Mark N. Lampert

Mark N. Lampert

President

BVF PARTNERS L.P.

By: BVF Inc., its general partner

By: /s/ Mark N. Lampert

Mark N. Lampert

President

BVF PARTNERS OS LTD.

By: BVF Partners L.P., its sole member

By: BVF Inc., its general partner

By: /s/ Mark N. Lampert

Mark N. Lampert
President

Biotechnology Value Trading Fund OS LP

By: BVF Partners L.P., its investment manager

By: BVF Inc., its general partner

By: /s/ Mark N. Lampert
Mark N. Lampert
President