

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
THERE TO FILED PURSUANT TO 13d-2
(Amendment No.)*

AcelRx Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

00444T100

(CUSIP Number)

May 21, 2018

(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 disclosures provided in a prior cover page.

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).

CUSIP No. 00444T100

13 G

1 Names of Reporting Persons.
Leerink Revelation Healthcare Fund I, L.P.

2 Check the Appropriate Box if a Member of a Group*

- (a)
(b) (1)

3 SEC Use Only

4 Citizenship or Place of Organization
Delaware, United States of America

5 Sole Voting Power
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6 Shared Voting Power
3,746,817 shares (2)

7 Sole Dispositive Power
0

8 Shared Dispositive Power
3,746,817 shares (2)

9 Aggregate Amount Beneficially Owned by Each Reporting Person
3,746,817 shares (2)

10 Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares*

11 Percent of Class Represented by Amount in Row 9
7.30% (3)

12 Type of Reporting Person*
PN

- (1) This Schedule 13G is filed by Leerink Revelation Healthcare Fund I, L.P. ("Fund I"), Leerink Revelation Healthcare Fund I GP, L.P. ("Fund I GP LP"), Leerink Revelation Healthcare Fund I GP, LLC ("Fund I GP LLC"), Scott Halsted ("Halsted"), Zachary Scott ("Scott") and Timothy A.G. Gerhold ("Gerhold," and collectively with Fund I, Fund I GP LP, Fund I GP LLC, Halsted and Scott, the "Reporting Persons"). The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.
- (2) The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.
- (3) The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer's Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

2

CUSIP No. 00444T100

13 G

1 Names of Reporting Persons.
Leerink Revelation Healthcare Fund I GP, L.P.

2 Check the Appropriate Box if a Member of a Group*

(a)

(b) (1)

3 SEC Use Only

4 Citizenship or Place of Organization
Delaware, United States of America

5 Sole Voting Power
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6 Shared Voting Power
3,746,817 shares (2)

7 Sole Dispositive Power
0

8 Shared Dispositive Power
3,746,817 shares (2)

9 Aggregate Amount Beneficially Owned by Each Reporting Person
3,746,817 shares (2)

10 Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares*

11 Percent of Class Represented by Amount in Row 9

12 Type of Reporting Person*
PN

- (1) This Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.
 (2) The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.
 (3) The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer's Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

3

CUSIP No. 00444T100

13 G

1 Names of Reporting Persons.
Leerink Revelation Healthcare Fund I GP, LLC

2 Check the Appropriate Box if a Member of a Group*

(a)

(b) (1)

3 SEC Use Only

4 Citizenship or Place of Organization
Delaware, United States of America

5 Sole Voting Power
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6 Shared Voting Power
3,746,817 shares (2)

7 Sole Dispositive Power
0

8 Shared Dispositive Power
3,746,817 shares (2)

9 Aggregate Amount Beneficially Owned by Each Reporting Person
3,746,817 shares (2)

10 Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares*

11 Percent of Class Represented by Amount in Row 9
7.30% (3)

12 Type of Reporting Person*
OO

- (1) This Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.
 (2) The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.
 (3) The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer's Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

CUSIP No. 00444T100

13 G

1 Names of Reporting Persons.
Scott Halsted

2 Check the Appropriate Box if a Member of a Group*

(a)

(b) (1)

3 SEC Use Only

4 Citizenship or Place of Organization
United States of America

5 Sole Voting Power
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6 Shared Voting Power
3,746,817 shares (2)

7 Sole Dispositive Power
0

8 Shared Dispositive Power
3,746,817 shares (2)

9 Aggregate Amount Beneficially Owned by Each Reporting Person
3,746,817 shares (2)

10 Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares*

11 Percent of Class Represented by Amount in Row 9
7.30% (3)

12 Type of Reporting Person*
IN

- (1) This Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.
- (2) The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.
- (3) The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer's Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

CUSIP No. 00444T100

13 G

1 Names of Reporting Persons.
Zachary Scott

2 Check the Appropriate Box if a Member of a Group*

(a)

(b) (1)

3 SEC Use Only

4 Citizenship or Place of Organization
United States of America

5 Sole Voting Power
0

6 Shared Voting Power
3,746,817 shares (2)

7 Sole Dispositive Power
0

8 Shared Dispositive Power
3,746,817 shares (2)

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

9 Aggregate Amount Beneficially Owned by Each Reporting Person
3,746,817 shares (2)

10 Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares*

11 Percent of Class Represented by Amount in Row 9
7.30% (3)

12 Type of Reporting Person*
IN

- (1) This Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.
- (2) The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.
- (3) The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer's Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

1 Names of Reporting Persons.
Timothy A.G. Gerhold

2 Check the Appropriate Box if a Member of a Group*

(a)

(b) (1)

3 SEC Use Only

4 Citizenship or Place of Organization
United States of America

	5	Sole Voting Power 0
Number of Shares Beneficially Owned by Each Reporting Person With	6	Shared Voting Power 3,746,817 shares (2)
	7	Sole Dispositive Power 0
	8	Shared Dispositive Power 3,746,817 shares (2)
	9	Aggregate Amount Beneficially Owned by Each Reporting Person 3,746,817 shares (2)
10	Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares* <input type="checkbox"/>	
11	Percent of Class Represented by Amount in Row 9 7.30% (3)	
12	Type of Reporting Person* IN	

- (1) This Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13G.
- (2) The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.
- (3) The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer’s Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

7

CUSIP No. 00444T100

13 G

Introductory Note: This statement on Schedule 13G is filed by the Reporting Persons with the Commission in respect of shares of Common Stock, par value \$0.001 per share (“Common Stock”), of AcetRx Pharmaceuticals, Inc., a Delaware corporation (the “Issuer”).

Item 1

- (a) Name of Issuer:
AcetRx Pharmaceuticals, Inc.
- (b) Address of Issuer’s Principal Executive Offices:
351 Galveston Drive
Redwood City, CA 94063

Item 2

- (a) Name of Reporting Persons Filing:
1. Leerink Revelation Healthcare Fund I, L.P. (“Fund I”)
 2. Leerink Revelation Healthcare Fund I GP, L.P. (“Fund I GP LP”)
 3. Leerink Revelation Healthcare Fund I GP, LLC (“Fund I GP LLC”)
 4. Scott Halsted (“Halsted”)
 5. Zachary Scott (“Scott”)
 6. Timothy A.G. Gerhold (“Gerhold”)
- (b) Address of Principal Business Office:
Leerink Revelation Healthcare
255 California Street, 12th floor
San Francisco, CA 94111
- (c) Citizenship:
1. Fund I — limited partnership organized under the laws of the State of Delaware
 2. Fund I GP LP — limited partnership organized under the laws of the State of Delaware

3. Fund I GP LLC — limited liability company organized under the laws of the State of Delaware
4. Halsted — United States of America
5. Scott — United States of America
6. Gerhold — United States of America

(d) Title of Class of Securities:
Common Stock

(e) CUSIP Number:
00444T100

Item 3 Not applicable.

8

CUSIP No. 00444T100

13 G

Item 4 Ownership.

The following information with respect to the aggregate amount and percent of the class of securities of the issuer identified in Item 1 beneficially owned by the Reporting Persons filing this statement on Schedule 13G is provided as of May 21, 2018:

(a) Amount beneficially owned:
3,746,817

(b) Percent of class:
7.3%

The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.

The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer's Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

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

(i) Sole power to vote or to direct the vote
0

(ii) Shared power to vote or to direct the vote
3,746,817

(iii) Sole power to dispose or to direct the disposition of
0

(iv) Shared power to dispose or to direct the disposition of
3,746,817

Reporting Persons	Sole Voting Power	Shared Voting Power (1)	Sole Dispositive Power	Shared Dispositive Power (1)	Beneficial Ownership (1)	Percentage of Class (1),(2)
Fund I	0	3,746,817	0	3,746,817	3,746,817	7.30%
Fund I GP LP	0	3,746,817	0	3,746,817	3,746,817	7.30%
Fund I GP LLC	0	3,746,817	0	3,746,817	3,746,817	7.30%
Halsted	0	3,746,817	0	3,746,817	3,746,817	7.30%
Scott	0	3,746,817	0	3,746,817	3,746,817	7.30%
Gerhold	0	3,746,817	0	3,746,817	3,746,817	7.30%

(1) The shares are directly held by Fund I. Fund I GP LP is the sole General Partner of Fund I. Halsted, Scott and Gerhold are the Managers of Fund I GP LLC which is the sole General Partner of Fund I GP LP. Each of Halsted, Scott, Gerhold, Fund I GP LLC and Fund I GP LP may be deemed to share voting and dispositive power over the shares held by Fund I.

(2) The percent of class was calculated based on 51,320,598 shares of common stock issued and outstanding as of May 7, 2018, as reported on the Issuer's Form 10-Q filed with the Securities and Exchange Commission on May 10, 2018.

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:

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

Not applicable.

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

Not applicable.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in the attached statement on Schedule 13G is true, complete and correct.

Dated: May 31, 2018

LEERINK REVELATION HEALTHCARE FUND I, L.P.

By: Leerink Revelation Healthcare Fund I GP, L.P., its general partner
By: Leerink Revelation Healthcare Fund I GP, LLC, its general partner

By: /s/ Scott Halsted
Scott Halsted, Manager

LEERINK REVELATION HEALTHCARE FUND I GP, L.P.

By: Leerink Revelation Healthcare Fund I GP, LLC, its general partner

By: /s/ Scott Halsted
Scott Halsted, Manager

LEERINK REVELATION HEALTHCARE FUND I GP, LLC

By: /s/ Scott Halsted
Scott Halsted, Manager

SCOTT HALSTED

/s/ Scott Halsted
Scott Halsted

ZACHARY SCOTT

/s/ Zachary Scott
Zachary Scott

TIMOTHY A.G. GERHOLD

/s/ Timothy A.G. Gerhold
Timothy A.G. Gerhold

Exhibit(s):

CUSIP No. 00444T100

13 G

EXHIBIT A

JOINT FILING STATEMENT

We, the undersigned, hereby express our agreement that the attached statement on Schedule 13G relating to the Common Stock of AcelRx Pharmaceuticals, Inc. is filed on behalf of each of us.

Dated: May 31, 2018

LEERINK REVELATION HEALTHCARE FUND I, L.P.

By: Leerink Revelation Healthcare Fund I GP, L.P., its general partner

By: Leerink Revelation Healthcare Fund I GP, LLC, its general partner

By: /s/ Scott Halsted
Scott Halsted, Manager

LEERINK REVELATION HEALTHCARE FUND I GP, L.P.

By: Leerink Revelation Healthcare Fund I GP, LLC, its general partner

By: /s/ Scott Halsted
Scott Halsted, Manager

LEERINK REVELATION HEALTHCARE FUND I GP, LLC

By: /s/ Scott Halsted
Scott Halsted, Manager

SCOTT HALSTED

/s/ Scott Halsted
Scott Halsted

ZACHARY SCOTT

/s/ Zachary Scott
Zachary Scott

CUSIP No. 00444T100

13 G

TIMOTHY A.G. GERHOLD

/s/ Timothy A.G. Gerhold
Timothy A.G. Gerhold
