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**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

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**Schedule 13D**

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULES 13d-1 (a) AND  
AMENDMENTS THERETO FILED PURSUANT TO 13d-2 (a)  
(AMENDMENT NO. 6)\***

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**AcelRx Pharmaceuticals, Inc.**

(Name of Issuer)

**Common Stock**  
(Title of Class of Securities)

**00444T100**  
(CUSIP Number)

**Mark Wan**  
c/o Three Arch Partners  
19 South B Street, Suite 14  
San Mateo, CA 94401  
(650) 529-8000

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

**COPY TO:**

**Sean Caplice, Esq.**  
c/o Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP  
1200 Seaport Boulevard, Redwood City, California 94063  
(650) 321-2400

**May 21, 2018**

(Date of Event Which Requires Filing of this Statement)

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If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box

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**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7 for other parties to whom copies are to be sent.

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\* 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 the cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purposes 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).

**(Continued on following pages)**

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1	NAME OF REPORTING PERSONS Three Arch Partners IV, L.P. (the "TAP IV")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 shares. Please see Item 5 for more information.
	8	SHARED VOTING POWER 0
	9	SOLE DISPOSITIVE POWER 0 shares. Please see Item 5 for more information.
	10	SHARED DISPOSITIVE POWER 0 shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions) <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0%	
14	TYPE OF REPORTING PERSON (See Instructions) PN	

1	NAME OF REPORTING PERSONS Three Arch Associates IV, L.P. ("TAA IV")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares. Please see Item 5 for more information.
	8	SHARED VOTING POWER  0 shares.
	9	SOLE DISPOSITIVE POWER  0 shares. Please see Item 5 for more information.
	10	SHARED DISPOSITIVE POWER  0 shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions)  <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0%	
14	TYPE OF REPORTING PERSON (See Instructions)  PN	

1	NAME OF REPORTING PERSONS Three Arch Management IV, L.L.C. ("TAM IV")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares. Please see Item 5 for more information.
	8	SHARED VOTING POWER  0 shares.
	9	SOLE DISPOSITIVE POWER  0 shares. Please see Item 5 for more information.
	10	SHARED DISPOSITIVE POWER  0 shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions)  <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0%	
14	TYPE OF REPORTING PERSON (See Instructions)  OO	

1	NAME OF REPORTING PERSONS  Three Arch Partners III, L.P. (the "TAP III")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares. Please see Item 5 for more information.
	8	SHARED VOTING POWER  0 shares.
	9	SOLE DISPOSITIVE POWER  0 shares. Please see Item 5 for more information.
	10	SHARED DISPOSITIVE POWER  0 shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions)  <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0%	
14	TYPE OF REPORTING PERSON (See Instructions)  PN	

1	NAME OF REPORTING PERSONS Three Arch Associates III, L.P. ("TAA III")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares. Please see Item 5 for more information.
	8	SHARED VOTING POWER  0 shares.
	9	SOLE DISPOSITIVE POWER  0 shares. Please see Item 5 for more information.
	10	SHARED DISPOSITIVE POWER  0 shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions)  <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0%	
14	TYPE OF REPORTING PERSON (See Instructions)  PN	

1	NAME OF REPORTING PERSONS Three Arch Management III, L.L.C. ("TAM III")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 shares. Please see Item 5 for more information.
	8	SHARED VOTING POWER 0 shares.
	9	SOLE DISPOSITIVE POWER 0 shares. Please see Item 5 for more information.
	10	SHARED DISPOSITIVE POWER 0 shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions)  <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0%	
14	TYPE OF REPORTING PERSON (See Instructions) OO	

1	NAME OF REPORTING PERSONS I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (Entities Only).  Mark Wan (“Wan”)	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  80,625 shares (all of which are represented by options exercisable within 60 days hereof).
	8	SHARED VOTING POWER  0 shares. Please see Item 5 for more information.
	9	SOLE DISPOSITIVE POWER  80,625 shares (all of which are represented by options exercisable within 60 days hereof).
	10	SHARED DISPOSITIVE POWER  0 shares. Please see Item 5 for more information.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions)  <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0%	
14	TYPE OF REPORTING PERSON (See Instructions)  IN	



1	NAME OF REPORTING PERSONS I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (Entities Only).  Wilfred Jaeger (“Jaeger”)	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  0 shares.
	8	SHARED VOTING POWER  0 shares. Please see Item 5 for more information.
	9	SOLE DISPOSITIVE POWER  0 shares.
	10	SHARED DISPOSITIVE POWER  0 shares. Please see Item 5 for more information.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  0 shares. Please see Item 5 for more information.	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (See Instructions)  <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  0%	
14	TYPE OF REPORTING PERSON (See Instructions)  IN	

**Statement on Schedule 13D**

This Amendment No. 6 supplements and amends the Schedule 13D originally filed with the Securities and Exchange Commission on February 25, 2011, as amended May 29, 2012, as amended December 17, 2012, as amended on March 7, 2014, as amended on February 15, 2017 and as amended on October 25, 2017 (as amended, the "Schedule 13D"). Only those items that are hereby reported are amended; all other items remain unchanged.

**ITEM 4. PURPOSE OF TRANSACTION.**

Item 4 of the Schedule 13D is amended and supplemented by adding the following information to Item 4:

This Schedule 13D relates to (i) Three Arch Partners IV, L.P., a Delaware limited partnership ("TAP IV"); (ii) Three Arch Associates IV, L.P., a Delaware limited partnership ("TAA IV"); (iii) Three Arch Partners III, L.P., a Delaware limited partnership ("TAP III"); (iv) Three Arch Associates III, L.P., a Delaware limited partnership ("TAA III"); (v) Three Arch Management IV, L.L.C., a Delaware limited liability company ("TAM IV"); (vi) Three Arch Management III, L.L.C., a Delaware limited liability company ("TAM III"); (vii) Mark Wan, a United States citizen ("Wan"); and (viii) Wilfred Jaeger, a United States citizen ("Jaeger") and together with Wan, the "Managing Members". TAP IV, TAA IV, TAP III, TAA III, TAM IV, TAM III and the Managing Members are collectively referred to as the "Reporting Persons."

On May 21 2018, the Reporting Persons and certain other affiliates of the Reporting Persons and Leerink Revelation Healthcare Fund I, L.P., Industry Ventures Secondary VIII, L.P. and Kline Hill Partners Fund II LP (the "Purchasers") entered into a purchase agreement (the "Purchase Agreement") pursuant to which the Reporting Persons agreed to a sale to the Purchasers (the "Portfolio Sale") of a portfolio of assets held by the Reporting Persons consisting of the securities of private and public companies, including the 9,367,041 shares of Common Stock (the "AcelRx Shares") of AcelRx Pharmaceuticals, Inc. (the "Issuer") and other investment interests. The transfer of the AcelRx Shares and the securities of another portfolio asset (such securities together with the AcelRx Shares, the "Initial Closing Securities") was consummated at an initial closing on May 21, 2018 to the Purchasers.

The Portfolio Sale was undertaken for portfolio management purposes in connection with the imminent expiration of the terms of the Reporting Persons under their respective governing agreements, as the Reporting Persons were initially formed between 1999 and 2004 with initially contemplated terms of ten years. The Portfolio Sale was undertaken as a result of the imminent dissolution of the Reporting Persons due to the upcoming expiration of the terms under the governing agreements. The Portfolio Sale is not being undertaken as a result of an adverse change in the Reporting Persons' views on the prospects of the Issuer, or its businesses, management or directors. Wan, a director of the Issuer and affiliate of the Reporting Persons, will continue serving as a member of the Issuer's Board of Directors after the Portfolio Sale.

The aggregate purchase price to be paid by the Purchasers in the Portfolio Sale is \$30 million in up front consideration, plus a residual amount calculated based on, among other things, the trading price of the AcelRx Shares and certain other securities as of the end of calendar year 2018, up to a maximum aggregate amount of \$12.5 million in additional consideration (the "Residual Consideration"). The Initial Closing Securities sold by the Reporting Persons in the Portfolio Sale were priced on an aggregate basis, for total consideration in the range of \$25 million to \$37.5 million, depending upon the amount of Residual Consideration eventually paid.

**ITEM 5. INTEREST IN SECURITIES OF THE ISSUER.**

Item 5 of the Schedule 13D is hereby amended and restated in its entirety as follows:

(a, b) The information requested by this paragraph is incorporated herein by reference to the information provided on the cover pages to this Amendment No. 6.

(c) The information requested by this paragraph is incorporated herein by reference to the information provided in Item 4 to this Amendment No. 6.

Except as described above, there were no transactions in the Common Stock effected by the Reporting Persons during the past sixty days.

**ITEM 6. CONTRACTS, ARRANGEMENTS, UNDERSTANDINGS OR RELATIONSHIPS WITH RESPECT TO SECURITIES OF THE ISSUER.**

Item 6 of the Schedule 13D is amended and supplemented by adding the following information to Item 6:

The information requested by this paragraph is incorporated herein by reference to the information provided in Item 4 to this Amendment No. 6.

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.

Date: May 23, 2018

Three Arch Partners IV, L.P.  
By Three Arch Management IV, L.L.C.  
Its General Partner

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney

Three Arch Associates IV, L.P.  
By Three Arch Management IV, L.L.C.  
Its General Partner

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney

Three Arch Partners III, L.P.  
By Three Arch Management III, L.L.C.  
Its General Partner

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney

Three Arch Associates III, L.P.  
By Three Arch Management III, L.L.C.  
Its General Partner

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney

Three Arch Management IV, L.L.C.

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney

Three Arch Management III, L.L.C.

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney

Mark Wan

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney

Wilfred Jaeger

/s/ Steve Agelopoulos  
Steve Agelopoulos, by Power of Attorney