

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D
(Rule 13d-101)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO 13d-1(a) AND
AMENDMENTS THERETO FILED PURSUANT TO 13d-2(a)

(Amendment # _____)*

AcelRx Pharmaceuticals, Inc.
(Name of Issuer)

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

00444T100
(CUSIP Number)

Hilary Strain
Alta Partners
One Embarcadero Center, Suite 3700
San Francisco, CA 94111
(415) 362-4022

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

February 16, 2011
(Date of Event which Requires Filing of this Statement)

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), Rule 13d-1(f) or Rule 13d-1(g), check the following box.

*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).



(1) Names of Reporting Persons.	
ACP IV, L.P.	
(2) Check The Appropriate Box If A Member Of A Group	(a) (b) X
(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) :	
(6) Citizenship Or Place Of Organization	Delaware
Number Of Shares Beneficially Owned By Each Reporting Person With	(7) Sole Voting Power 2,794,907 (a)
	(8) Shared Voting Power -0-
	(9) Sole Dispositive Power 2,794,907 (a)
	(10) Shared Dispositive Power -0-
(11) Aggregate Amount Beneficially Owned By Each Reporting Person	2,794,907 (a)
(12) Check If The Aggregate Amount In Row (11) Excludes Certain Shares*	
(13) Percent Of Class Represented By Amount In Row (11)	14.4% (b)
(14) Type Of Reporting Person	PN

(a) ACP IV, L.P. (“ACP IV”) has sole voting and dispositive control over these shares of common stock (“Common Stock”) of AcelRx Pharmaceuticals, Inc. (the “Issuer”), except that ACMP IV, LLC (“ACMP IV”), the general partner of ACP IV, and Guy Nohra (“Nohra”), Jean Deleage (“Deleage”), Daniel Janney (“Janney”), and David Mack (“Mack”), directors of ACMP IV, may be deemed to share the right to direct the voting and dispositive control over such stock.

(b) The percentage set forth in row (13) is based on an aggregate of 19,371,750 shares of Common Stock outstanding as of February 16, 2011 as disclosed in the Issuer’s final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on February 11, 2011.

(1) Names of Reporting Persons.			
ACMP IV, LLC			
(2) Check The Appropriate Box If A Member Of A Group		(a)	
		(b)	X
(3) SEC Use Only			
(4) Source Of Funds			
AF			
(5) Check Box If Disclosure Of Legal Proceedings Is Required Pursuant To Items 2(d) Or 2(e) :			
(6) Citizenship Or Place Of Organization			
Delaware			
Number Of Shares Beneficially Owned By Each Reporting Person With	(7)	Sole Voting Power	-0-
	(8)	Shared Voting Power	2,794,907(c)
	(9)	Sole Dispositive Power	-0-
	(10)	Shared Dispositive Power	2,794,907(c)
(11) Aggregate Amount Beneficially Owned By Each Reporting Person			
2,794,907 (c)			
(12) Check If The Aggregate Amount In Row (11) Excludes Certain Shares*			
(13) Percent Of Class Represented By Amount In Row (11)			
14.4% (b)			
(14) Type Of Reporting Person			
OO			

(c) ACMP IV is the general partner of ACP IV and shares voting and dispositive power over the shares of Common Stock held by those entities.

(b) The percentage set forth in row (13) is based on an aggregate of 19,371,750 shares of Common Stock outstanding as of February 16, 2011 as disclosed in the Issuer's final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on February 11, 2011.

(1) Names of Reporting Persons.			
Guy Nohra			
(2) Check The Appropriate Box If A Member Of A Group		(a)	
		(b)	X
(3) SEC Use Only			
(4) Source Of Funds			
AF			
(5) Check Box If Disclosure Of Legal Proceedings Is Required Pursuant To Items 2(d) Or 2(e) :			
(6) Citizenship Or Place Of Organization			
U.S.A.			
Number Of Shares Beneficially Owned By Each Reporting Person With	(7)	Sole Voting Power	-0-
	(8)	Shared Voting Power	2,794,907(d)
	(9)	Sole Dispositive Power	-0-
	(10)	Shared Dispositive Power	2,794,907(d)
(11) Aggregate Amount Beneficially Owned By Each Reporting Person			
2,794,907 (d)			
(12) Check If The Aggregate Amount In Row (11) Excludes Certain Shares*			
(13) Percent Of Class Represented By Amount In Row (11)			
14.4% (b)			
(14) Type Of Reporting Person			
IN			

(d) Nohra is a director of ACMP IV and shares voting and dispositive control over the shares of Common Stock held by ACP IV. Nohra disclaims beneficial ownership of such shares except to the extent of his proportionate pecuniary interest therein.

(b) The percentage set forth in row (13) is based on an aggregate of 19,371,750 shares of Common Stock outstanding as of February 16, 2011 as disclosed in the Issuer's final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on February 11, 2011.



(1) Names of Reporting Persons.			
Jean Deleage			
(2) Check The Appropriate Box If A Member Of A Group		(a)	
		(b)	X
(3) SEC Use Only			
(4) Source Of Funds			
AF			
(5) Check Box If Disclosure Of Legal Proceedings Is Required Pursuant To Items 2(d) Or 2(e) :			
(6) Citizenship Or Place Of Organization			
U.S.A.			
Number Of Shares Beneficially Owned By Each Reporting Person With	(7)	Sole Voting Power	-0-
	(8)	Shared Voting Power	2,794,907(e)
	(9)	Sole Dispositive Power	-0-
	(10)	Shared Dispositive Power	2,794,907(e)
(11) Aggregate Amount Beneficially Owned By Each Reporting Person			
2,794,907 (e)			
(12) Check If The Aggregate Amount In Row (11) Excludes Certain Shares*			
(13) Percent Of Class Represented By Amount In Row (11)			
14.4% (b)			
(14) Type Of Reporting Person			
IN			

(e) Deleage is a director of ACMP IV and shares voting and dispositive control over the shares of Common Stock held by ACP IV. Deleage disclaims beneficial ownership of such shares except to the extent of his proportionate pecuniary interest therein.

(b) The percentage set forth in row (13) is based on an aggregate of 19,371,750 shares of Common Stock outstanding as of February 16, 2011 as disclosed in the Issuer's final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on February 11, 2011.

(1) Names of Reporting Persons.			
Daniel Janney			
(2) Check The Appropriate Box If A Member Of A Group		(a)	
		(b)	X
(3) SEC Use Only			
(4) Source Of Funds			
AF			
(5) Check Box If Disclosure Of Legal Proceedings Is Required Pursuant To Items 2(d) Or 2(e) :			
(6) Citizenship Or Place Of Organization			
U.S.A.			
Number Of Shares Beneficially Owned By Each Reporting Person With	(7)	Sole Voting Power	-0-
	(8)	Shared Voting Power	2,794,907(f)
	(9)	Sole Dispositive Power	-0-
	(10)	Shared Dispositive Power	2,794,907(f)
(11) Aggregate Amount Beneficially Owned By Each Reporting Person			
2,794,907 (f)			
(12) Check If The Aggregate Amount In Row (11) Excludes Certain Shares*			
(13) Percent Of Class Represented By Amount In Row (11)			
14.4% (b)			
(14) Type Of Reporting Person			
IN			

(f) Janney is a director of ACMP IV and shares voting and dispositive control over the shares of Common Stock held by ACP IV. Janney disclaims beneficial ownership of such shares except to the extent of his proportionate pecuniary interest therein.

(b) The percentage set forth in row (13) is based on an aggregate of 19,371,750 shares of Common Stock outstanding as of February 16, 2011 as disclosed in the Issuer's final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on February 11, 2011.

(1) Names of Reporting Persons. David Mack			
(2) Check The Appropriate Box If A Member Of A Group		(a)	
		(b)	X
(3) SEC Use Only			
(4) Source Of Funds AF			
(5) Check Box If Disclosure Of Legal Proceedings Is Required Pursuant To Items 2(d) Or 2(e) :			
(6) Citizenship Or Place Of Organization U.S.A.			
Number Of Shares Beneficially Owned By Each Reporting Person With	(7)	Sole Voting Power	-0-
	(8)	Shared Voting Power	2,794,907(g)
	(9)	Sole Dispositive Power	-0-
	(10)	Shared Dispositive Power	2,794,907(g)
(11) Aggregate Amount Beneficially Owned By Each Reporting Person 2,794,907 (g)			
(12) Check If The Aggregate Amount In Row (11) Excludes Certain Shares*			
(13) Percent Of Class Represented By Amount In Row (11) 14.4% (b)			
(14) Type Of Reporting Person IN			

(g) Mack is a director of ACMP IV and shares voting and dispositive control over the shares of Common Stock held by ACP IV. Mack disclaims beneficial ownership of such shares except to the extent of his proportionate pecuniary interest therein.

(b) The percentage set forth in row (13) is based on an aggregate of 19,371,750 shares of Common Stock outstanding as of February 16, 2011 as disclosed in the Issuer's final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on February 11, 2011.



Item 1. Security and Issuer.

The title and class of securities to which this Statement on Schedule 13D (this “Statement”) relates is the common stock, par value \$0.001 per share (the “Common Stock”), of AcelRx Pharmaceuticals Inc., a Delaware corporation (the “Issuer”). The principal executive office of the Issuer is located at 575 Chesapeake Drive, Redwood City, CA 94063. Information given in response to each item shall be deemed incorporated by reference in all other items as applicable.

Item 2. Identity and Background.

(a) This Statement is being filed by (i) ACP IV, L.P., a Delaware limited partnership (“ACP IV”), (ii) ACMP IV, LLC, a Delaware limited liability company (“ACMP IV”), and (iii) Guy Nohra, Jean Deleage, Daniel Janney, and David Mack (collectively referred to as the “Directors”), the Directors of ACMP IV. Guy Nohra is also a Director of the Issuer. ACP IV, ACMP IV and the Directors are sometimes hereinafter collectively referred to as the “Reporting Persons.”

(b) The principal executive offices of ACP IV and ACMP IV, and the business address of each of the Directors, are located at One Embarcadero Center, Suite 3700, San Francisco, California 94111.

(c) The principal business of ACP IV is making venture capital investments. ACMP IV’s principal business is acting as general partner of ACP IV. Each of the Directors’ principal business is acting as a director of ACMP IV.

(d) During the past five years, none of the Reporting Persons has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) During the past five years, none of the Reporting Persons was a party to a civil proceeding of a judicial or administrative body of competent jurisdiction as a result of which such person was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws of finding any violation with respect to such laws.

(f) Each of the Directors is a citizen of the United States.

Item 3. Source and Amount of Funds or Other Consideration.

On August 16, 2006 ACP IV purchased from the Issuer 2,000,000 shares of Series A Convertible Preferred Stock (“Series A Shares”). The aggregate purchase price of the Series A Shares was \$5,000,000. ACP IV received the funds used to purchase the Series A Shares from capital contributions made to ACP IV by its partners for investment purposes. Upon the closing of the Issuer’s initial public offering on February 16, 2011 (the “IPO Closing”), each of the Series A Shares automatically converted into 0.341452 shares of Common Stock in accordance with the terms of the Issuer’s Amended and Restated Certificate of Incorporation (conversion includes the 1-for-4 reverse stock split). ACP IV acquired 682,904 shares of Common Stock upon the conversion of its Series A Shares.

On February 4, 2008, ACP IV purchased from the Issuer 875,000 shares of Series B Convertible Preferred Stock (“Series B Shares”). The aggregate purchase price of the Series B Shares was \$3,500,000. ACP IV received the funds used to purchase the Series B Shares from capital contributions made to ACP IV by its partners for investment purposes. Upon the IPO Closing, each of the Series B Shares automatically converted into 0.37493 shares of Common Stock in accordance with the terms of the Issuer’s Amended and Restated Certificate of Incorporation (conversion includes the 1-for-4 reverse stock split). ACP IV acquired 328,064 shares of Common Stock upon the conversion of its Series B Shares.

On November 23, 2009, ACP IV purchased from the Issuer 3,240,517 shares of Series C Convertible Preferred Stock (“Series C Shares”). The aggregate purchase price of the Series C Shares was \$3,194,177.61. ACP IV received the funds used to purchase the Series C Shares from capital contributions made to ACP IV by its partners for investment purposes. Upon the IPO Closing, each of the Series C Shares, plus accrued dividends thereon, automatically converted into 0.2499999 shares of Common Stock in accordance with the terms of the Issuer’s Amended and Restated Certificate of Incorporation (conversion includes the 1-for-4 reverse stock split). ACP IV acquired 810,129 shares of Common Stock upon the conversion of its Series C Shares.

On September 14, 2010, ACP IV received from the Issuer a Convertible Promissory Note in principal amount of \$1,742,044 (the “Note”) and a warrant to purchase 110,457 shares of Series C Preferred Stock (the “Warrant”) of the Issuer in return for an aggregate investment of \$1,742,217.73. ACP IV received the funds used for the purchase of the Note and Warrant from capital contributions made to ACP IV by its partners for investment purposes. Pursuant to the Note and Warrant Transfer Agreement dated February 16, 2011, ACP IV, L.P. transferred, for nominal consideration, to other significant stockholders of the Issuer (i) a portion of the Note (representing principal, plus accrued interest, in the aggregate amount of \$655,656.79) and (ii) a portion of the Warrant, exercisable for 40,865 shares of Series C Preferred Stock. In connection with the IPO Closing, ACP IV net exercised the portion of the Warrant that it had retained, acquiring shares of Series C Preferred Stock which shares immediately converted into 14,713 shares of Common Stock upon the IPO Closing. Upon the IPO Closing, the outstanding principal amount and accrued but unpaid interest on the portion of the Note retained by ACP IV automatically converted into shares of Common Stock of the Issuer at a conversion price equal to 80% of the initial public offering price per share in accordance with the terms of the Note. The public offering price was \$5.00 per share, and as a result the conversion price of the Note and interest was \$4.00 per share. ACP IV acquired 279,097 shares of Common Stock upon the conversion of its Note and interest.

ACP IV also purchased 680,000 shares of Common Stock in the IPO. All purchases were made at the initial public offering price of \$5.00 per share, for an aggregate purchase price of \$3,400,000. ACP IV received the funds used for these purchases of shares of Common Stock from working capital.

Item 4. Purpose of Transaction.

ACP IV purchased the aforementioned securities for investment purposes with the aim of increasing the value of its investments and the Issuer.

Except as set forth in Item 6 below, none of the Reporting Persons have a present plan or proposal that relates to or would result in any of the actions specified in clauses (a) through (j) of Item 4 of Schedule 13D. However, each of the Reporting Persons reserves the right to propose or participate in future transactions which may result in one or more of such actions, including but not limited to, an extraordinary corporate transaction, such as a merger, reorganization or liquidation, sale of a material amount of assets of the Issuer or its subsidiaries, or other transactions which might have the effect of causing the Common Stock to become eligible for termination of registration under Section 12(g) of the Securities Exchange Act of 1934 (the “Act”). The Reporting Persons also retain the right to change their investment intent at any time, to acquire additional shares of Common Stock or other securities of the Issuer from time to time, or to sell or otherwise dispose of all or part of the Common Stock beneficially owned by them (or any shares of Common Stock into which such securities are converted) in any manner permitted by law. The Reporting Persons may engage from time to time in ordinary course transactions with financial institutions with respect to the securities described herein.



Item 5. Interest in Securities of the Issuer.

(a) As of February 16, 2011, ACP IV directly held 2,794,907 shares of Common Stock, representing 14.4% of the Issuer's outstanding Common Stock as of such date. As the general partner of ACP IV, ACMP IV beneficially owned 2,794,907 shares of Common Stock, representing 14.4% of the Issuer's Common Stock outstanding as of such date. Each of the Directors beneficially owned 2,794,907 shares of Common Stock, representing 14.4% of the Issuer's outstanding Common Stock as of such date. The percentages set forth in this Item 5 are calculated based upon 19,371,750 shares of the Issuer's Common Stock outstanding as of February 16, 2011, as set forth in the Issuer's final prospectus filed with the SEC pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on February 11, 2011.

(b) ACP IV has sole voting and dispositive control over 2,794,907 shares of Common Stock. None of the other Reporting Persons owns any securities of the Issuer directly. ACMP IV, as the general partner of ACP IV, shares the power to direct the voting and disposition of the 2,794,907 shares of Common Stock held directly by ACP IV and may be deemed to beneficially own the shares of Common Stock held by such entity. By virtue of their positions as directors of ACMP IV, each Director shares the power to direct the disposition and vote of the 2,794,907 shares of Common Stock held directly by ACP IV and may be deemed to beneficially own the shares of Common Stock held by such entity. Each of the Directors disclaims beneficial ownership of all such shares of Common Stock held by ACP IV, except to the extent of his proportionate pecuniary interest therein.

(c) Except as set forth herein, none of the Reporting Persons has effected any transactions in shares of the Issuer's Common Stock during the last 60 days.

(d) No other person is known to have the right to receive or the power to direct the receipt of dividends from, or any proceeds from the sale of, the shares of Common Stock beneficially owned by any of the Reporting Persons.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.

Second Amended and Restated Investors' Rights Agreement

ACP IV and other stockholders of the Issuer have entered into the Second Amended and Restated Investors' Rights Agreement dated November 23, 2009 (the "Investor Rights Agreement") with the Issuer. Subject to the terms of the Investor Rights Agreement, holders of shares having registration rights ("Registrable Securities") can demand that the Issuer file a registration statement or request that their shares be covered by a registration statement that the Issuer is otherwise filing.

Demand Registration Rights

If the Issuer shall receive, at any time after August 11, 2011, a written request from the Holders (as defined in the Investor Rights Agreement) of at least 60% of the Registrable Securities then outstanding (the "Initiating Holders") that the Issuer file a registration statement under the Securities Act of 1933 (the "Securities Act") covering shares of Common Stock with an anticipated aggregate offering price to the public of at least \$10,000,000, then the Issuer shall, subject to certain conditions, (i) within twenty (20) days after the date such request is given, give notice thereof (the "Demand Notice") to all Holders other than the Initiating Holders; and (ii) use all commercially reasonable efforts to cause to be registered under the

Securities Act all of the Registrable Securities that each such Holder has requested to be registered within 20 days after the mailing of the Demand Notice. The Issuer shall not be obligated to effect, or to take any action to effect, any demand registration after the Issuer has effected two demand registrations.

If at any time when it is eligible to use a Form S-3 registration statement, the Issuer receives a request (a "Form S-3 Request") from Holders of at least ten percent (10%) of the Registrable Securities then outstanding that the Issuer file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least \$1,000,000, then the Issuer shall (i) promptly give written notice of the proposed registration (the "Form S-3 Demand Notice") to all other Holders; (ii) use all commercially reasonable efforts to effect, as soon as practicable, such registration on a Form S-3 registration statement of all or such portion of such Holders' Registrable Securities as are specified in the Form S-3 Request or are proposed to be included in the registration in response to the Form S-3 Demand Notice within fifteen (15) days after the date the Form S-3 Demand Notice is received. The Issuer shall not be obligated to effect, or to take any action to effect, any Form S-3 registration if the Issuer has effected two such Form S-3 registrations within the twelve month period immediately preceding the date of the Form S-3 Request.

Piggyback Registration Rights

Subject to certain exceptions, if the Issuer proposes to register any of its stock in connection with the public offering, solely for cash, of such securities by the Issuer or on behalf of selling stockholders, the Issuer shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within 20 days of the mailing of the notice by the Issuer, the Issuer shall, subject to the certain limitations, use its reasonable best efforts to cause to be registered all of the Registrable Securities that each such Holder has requested to be registered.

Expenses of Registration

Subject to certain limitations, the Issuer will pay all registration expenses, other than underwriting discounts and commissions, related to any registration effected pursuant to the Investor Rights Agreement.

Indemnification

The Investor Rights Agreement contains customary cross-indemnification provisions, pursuant to which the Issuer is obligated to indemnify the selling stockholders in the event of material misstatements or omissions in the registration statement attributable to the Issuer, and the selling stockholders are obligated to indemnify the Issuer for material misstatements or omissions attributable to them.

Termination

The Investor Rights Agreement shall terminate when the Issuer shall consummate a transaction or series of related transactions deemed to be a Liquidation Transaction (as such term is defined in the Issuer's Certificate of Incorporation).



Lock-up Agreement

ACP IV, along with the Issuer's directors and executive officers and substantially all of the other security holders of the Issuer have agreed with the underwriters for the Issuer's IPO that, subject to certain exceptions, for a period of 180 days following February 11, 2011, they will not offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into, exercisable or exchangeable for or that represent the right to receive Common Stock (including without limitation, Common Stock which may be deemed to be beneficially owned by such director, executive officer or security holder in accordance with rules and regulations of the SEC and securities that may be issued upon exercise of a stock option or warrant) whether owned or later acquired, or enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of Common Stock or such other securities, or make any demand for, or exercise any right with respect to, the registration of any shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock, subject to specified exceptions. The underwriters for the IPO may, in their sole discretion, at any time without prior notice, release all or any portion of the shares from the restrictions in any such agreement.

The 180-day lock-up period described in the preceding paragraph will be extended if: a) during the last 17 days of the 180-day lock-up period the Issuer issues an earnings release or material news or a material event relating to the Issuer occurs; or b) prior to the expiration of the 180-day lock-up period, the Issuer announces that it will release earnings results during the 16-day period beginning on the last day of the 180-day period, in which case the restrictions described in the preceding paragraph will continue to apply until the expiration of the 18-day period beginning on the issuance of the release or the occurrence of the material news or material event, unless such extension is waived, in writing, by Piper Jaffray & Co. on behalf of the underwriters.

The foregoing descriptions of the terms of the Investor Rights Agreement and the Lock-up Agreement are intended as a summary only and are qualified in their entirety by reference to the Investor Rights Agreement and Form of Lock-up Agreement, each of which is filed as an exhibit to this Schedule 13D and incorporated by reference herein.

Other than as described in this Statement, to the best of the Reporting Persons' knowledge, there are no other contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 and between such persons and any person with respect to any securities of the Issuer.

Item 7. Material to be Filed as Exhibits.

Exhibit A: Joint Filing Statement.

Exhibit B: Amended and Restated Investor Rights Agreement by and among the Issuer and the investors identified on the signature pages thereto, dated as of November 23, 2009, incorporated by reference to Exhibit 4.3 to the Issuer's Registration Statement on Form S-1 (SEC File No. 333-170594), filed with the SEC on November 12, 2010.

Exhibit C: Form of Lock-up Agreement.

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: February 28, 2011

ACP IV, L.P.
By: ACMP IV, LLC
Its: General Partner

ACMP IV, LLC

By: /s/ Guy Nohra
Guy Norha, Director

By: /s/ Guy Nohra
Guy Norha, Director

 /s/ Jean Deleage

 /s/ Guy Nohra

 /s/ Daniel Janney

 /s/ David Mack



EXHIBIT A

Joint Filing Statement

We, the undersigned, hereby express our agreement that the attached Schedule 13D is filed on behalf of each of us.

Date: February 28, 2011

ACP IV, L.P.

By: ACMP IV, LLC

Its: General Partner

ACMP IV, LLC

By: /s/ Guy Nohra
Guy Norha, Director

By: /s/ Guy Nohra
Guy Norha, Director

 /s/ Jean Deleage

 /s/ Guy Nohra

 /s/ Daniel Janney

 /s/ David Mack



EXHIBIT C

Form of Lock-up Agreement

Piper Jaffray & Co.

As representative of the underwriters named
in Schedule 1 to the Purchase Agreement referred to below

c/o Piper Jaffray & Co.
800 Nicollet Mall, Suite 800
Minneapolis, MN 55402

Dear Sirs:

As an inducement to the underwriters (the “*Underwriters*”) to execute a purchase agreement (the “Purchase Agreement”) providing for the initial public offering (the “Offering”) of common stock, par value \$0.001 per share, (the “*Common Stock*”), of AcclRx Pharmaceuticals, Inc., a Delaware company, and any successor (by merger or otherwise) thereto (the “*Company*”), the undersigned hereby agrees that without, in each case, the prior written consent of Piper Jaffray & Co. (“*Piper Jaffray*”) during the period specified in the second succeeding paragraph (the “*Lock-Up Period*”), the undersigned will not (1) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into, exercisable or exchangeable for or that represent the right to receive Common Stock (including without limitation, Common Stock which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant) whether now owned or hereafter acquired (the “*Undersigned’s Securities*”) or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Undersigned’s Securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise. The foregoing restriction is expressly agreed to preclude the undersigned from engaging in any hedging or other transaction which is designed to or which reasonably could be expected to lead to or result in a sale or disposition of the Undersigned’s Securities even if such Securities would be disposed of by someone other than the undersigned. Such prohibited hedging or other transactions would include without limitation any short sale or any purchase, sale or grant of any right (including without limitation any put or call option) with respect to any of the Undersigned’s Securities or with respect to any security that includes, relates to, or derives any significant part of its value from such Securities.

In addition, the undersigned agrees that, without the prior written consent of Piper Jaffray, it will not, during the Lock-Up Period, make any demand for or exercise any right with respect to, the registration of any Common Stock or any security convertible into or exercisable or exchangeable for Common Stock.

The initial Lock-Up Period will commence on the date of this Lock-Up Agreement and continue and include the date 180 days after the date of the final prospectus used to sell Common Stock in the Offering pursuant to the Purchase Agreement, to which you are or expect to become parties; provided, however, that if (1) during the last 17 days of the initial Lock-Up Period, the Company releases earnings results or material news or a material event relating to the Company occurs or (2) prior to the expiration of the initial Lock-Up Period, the Company announces that it will release earnings results during the 16-day period beginning on the last day of the initial Lock-Up Period, then in each case the Lock-Up Period will be extended until the expiration of the 18-day period beginning on the date of release of the earnings results or the occurrence of the material news or material event, as applicable, unless Piper Jaffray, waives, in writing, such extension.

The undersigned hereby acknowledges that the Company will be requested to agree in the Purchase Agreement to provide written notice to the undersigned of any event that would result in an extension of the Lock-Up Period pursuant to the previous paragraph and agrees that any such notice properly delivered will be deemed to have been given to, and received by, the undersigned. The undersigned further agrees that, prior to engaging in any transaction or taking any other action that is subject to the terms of this Agreement during the period from the date of this Agreement to and including the 34th day following the expiration of the initial Lock-Up Period, it will give notice thereof to the Company and will not consummate such transaction or take any such action unless it has received written confirmation from the Company that the Lock-Up Period (as may have been extended pursuant to the previous paragraph) has expired.

Notwithstanding the foregoing, the undersigned may transfer the Undersigned's Securities (i) as a *bona fide* gift or gifts, (ii) by will or intestate succession; (iii) to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned; (iv) if the undersigned is a limited liability company, to a member or an affiliate of such limited liability company, (v) if the undersigned is a partnership, to a partner or an affiliate of the partnership; *provided*, in each case, that (x) such transfer shall not involve a disposition for value, (y) the transferee agrees in writing with the Underwriters to be bound by the terms of this Agreement and (z) no filing by any party under Section 16(a) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), shall be required or shall be made voluntarily in connection with such transfer (other than a filing of a Form 5 made after the expiration of the Lock-Up Period). For purposes of this Lock-Up Agreement, (i) "immediate family" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin and (ii) "affiliate" of the undersigned shall mean any business entity that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the undersigned. The term "control" in this paragraph means beneficial ownership of more than fifty percent (50%) of the issued and outstanding equity interest or share capital of an entity.

In addition, the foregoing restrictions shall not apply to (i) the exercise of any equity awards pursuant to the Company's equity incentive plans or the exercise of warrants issued by the Company; provided that such restrictions shall apply to any of the undersigned's Securities issued upon such exercise, (ii) any transfers of the undersigned's Securities to the Company (a) in full or partial payment of taxes or tax withholding obligations required to be paid or satisfied upon the settlement, vesting or exercise of any equity award granted by the Company or (b) in exercise of the Company's right to repurchase or reacquire the undersigned's Securities pursuant to agreements that permit the Company to repurchase or reacquire the undersigned's Securities upon termination of services to the Company; (iii) any transfers of the undersigned's Securities pursuant to a sale or an offer to purchase 100% of the outstanding Common Stock of the Company, whether pursuant to a merger, tender offer or otherwise, to a third party or group of third parties; or (iv) the establishment of any contract, instruction or plan (a "**Plan**") that satisfies all of the requirements of Rule 10b5-1 under the Exchange Act; *provided* that no sales of the undersigned's Securities shall be made pursuant to such a Plan prior to the expiration of the Lock-Up Period (as such may have been extended pursuant to the provisions hereof), and such a Plan may only be established if no public announcement of the establishment or existence thereof and no filing with the Securities and Exchange Commission or other regulatory authority in respect thereof or transactions thereunder or contemplated thereby, by the undersigned, the Company or any other person, shall be required, and no such announcement or filing is made voluntarily, by the undersigned,

the Company or any other person, prior to the expiration of the Lock-Up Period (as such may have been extended pursuant to the provisions hereof).

In furtherance of the foregoing, the Company and its transfer agent and registrar are hereby authorized to decline to make any transfer of shares of Common Stock if such transfer would constitute a violation or breach of this Lock-Up Agreement.

The undersigned hereby agrees that, to the extent that the terms of this Lock-Up Agreement conflict with or are in any way inconsistent with any registration rights agreement to which the undersigned and the Company may be a party, this Lock-Up Agreement supersedes such registration rights agreement.

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Lock-Up Agreement. All authority herein conferred or agreed to be conferred and any obligations of the undersigned shall be binding upon the successors, assigns, heirs or personal representatives of the undersigned.

The undersigned understands that the undersigned shall be released from all obligations under this Agreement if (i) the Company notifies the Underwriters that it does not intend to proceed with the Offering, (ii) the Purchase Agreement does not become effective, or if the Purchase Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Common Stock to be sold thereunder, or (iii) the Offering is not completed by July 31, 2011.

The undersigned understands that the Underwriters are entering into the Purchase Agreement and proceeding with the Offering in reliance upon this Lock-Up Agreement.

This Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

Very truly yours,

Printed Name of Holder

By:

Signature

Printed Name of Person Signing
(and indicate capacity of person signing if
signing as custodian, trustee, or on behalf of
an entity)