

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

**Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported) August 31, 2012

ACELRX PHARMACEUTICALS, INC.

(Exact name of registrant as specified in charter)

DELAWARE
(State of incorporation)

001-35068
(Commission
File No.)

41-2193603
(IRS Employer
Identification No.)

**351 Galveston Drive
Redwood City, CA 94063**
(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: (650) 216-3500

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under Exchange Act (17 CFR 240.13e-4(c))

Item 8.01. Other Events.

AcelRx Pharmaceuticals, Inc. (the “Company”) is filing this Current Report on Form 8-K to provide a copy of the legal opinion of Cooley LLP relating to the legality of the shares of the Company’s Common Stock to be offered and sold pursuant the Company’s Registration Statement on Form S-3 (File No. 333-183237) filed with the Securities and Exchange Commission on August 10, 2012 and the related prospectus supplement filed with the Securities and Exchange Commission on August 31, 2012.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

<u>Exhibit Number</u>	<u>Description</u>
5.1	Opinion of Cooley LLP.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: August 31, 2012

ACELRX PHARMACEUTICALS, INC.

By: /s/ James H. Welch

Name: James H. Welch

Title: Chief Financial Officer

EXHIBIT INDEX

Exhibit Number

Description

5.1

Opinion of Cooley LLP.



Mark B. Weeks
(650) 843-5011
mweeks@cooley.com

August 31, 2012

AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, CA 94063

RE: AcelRx Pharmaceuticals, Inc.

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the offering by AcelRx Pharmaceuticals, Inc, a Delaware corporation (the "**Company**"), of up to \$7,500,000.00 of shares of the Company's common stock, par value \$0.001 (the "**Shares**"), pursuant to a Registration Statement on Form S-3 (Registration Statement No. 333-183237) as may be amended and supplemented by subsequent filings (the "**Registration Statement**"), filed with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Act**"), the prospectus, dated August 31, 2012, included in the Registration Statement (the "**Base Prospectus**"), and the prospectus supplement dated August 31, 2012, filed with the Commission pursuant to Rule 424(b) of the rules and regulations of the Act (the "**Prospectus Supplement**"). The Base Prospectus and the Prospectus Supplement are collectively referred to as the "**Prospectus**." The Shares are to be sold by the Company in accordance with the At Market Issuance Sales Agreement (the "**Agreement**"), dated August 31, 2012, as described in the Prospectus.

In connection with this opinion, we have examined and relied upon originals, or copies certified to our satisfaction, of such records, documents, certificates, opinions, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters. We have assumed the genuineness and authenticity of all documents submitted to us as originals, and the conformity to originals of all documents submitted to us as copies thereof and the due execution and delivery of all documents where due execution and delivery are a prerequisite to the effectiveness thereof.

In rendering this opinion, we have assumed (i) that no more than 2,516,778 Shares will be sold, based on a sale price of \$2.98 per share, representing the last reported sale price of the Company's common stock on The NASDAQ Global Market on August 30, 2012 and (ii) that no Shares will be sold that would cause the Company to not satisfy the eligibility requirements for use of Form S-3 (including Instruction I.B.6. thereof).

With respect to securities of the Company to be issued after the date hereof, we express no opinion to the extent that, notwithstanding its current reservation of shares of common stock, future issuances of securities of the Company and/or antidilution adjustments to outstanding securities of the Company cause outstanding securities to be convertible for more shares of common stock than the number that remain authorized but unissued.

Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion herein is expressed solely with respect to the federal laws of the United States and the General Corporation Law of the State of Delaware. Our opinion is based on these laws as in effect on the date hereof, and we disclaim any obligation to advise you of facts, circumstances,



AcelRx Pharmaceuticals, Inc.

August 31, 2012

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events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein. We express no opinion as to whether the laws of any particular jurisdiction other than those identified above are applicable to the subject matter hereof.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when sold and issued against payment therefor in accordance with the Agreement, the Registration Statement and the Prospectus, will be validly issued, and the Shares fully paid and nonassessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus included in the Registration Statement and to the filing of this opinion as an exhibit to a Current Report on Form 8-K.

Sincerely,

COOLEY LLP

By: /s/ Mark B. Weeks

Mark B. Weeks

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