



June 11, 2014

VIA EDGAR

United States Securities and Exchange Commission
Division of Corporate Finance
100 F Street, N.E.
Washington, D.C. 20549

Attn: Christina De Rosa
Bryan J. Pitko

RE: **AcelRx Pharmaceuticals, Inc.**
Registration Statement on Form S-3
Filed May 19, 2014
File Number: 333-196089

Ladies and Gentlemen:

Pursuant to Rule 461 under the Securities Act of 1933, as amended, the undersigned registrant hereby requests that the Securities and Exchange Commission (the "Commission") take appropriate action to cause the above-referenced Registration Statement on Form S-3 (the "Filing") to become effective at 4:00 p.m. Eastern Time on Thursday, June 12, 2014, or as soon thereafter as is practicable.

In connection with this request, the undersigned registrant hereby acknowledges that:

- should the Commission or the staff of the Commission (the "Staff"), acting pursuant to delegated authority, declare the Filing effective, it does not foreclose the Commission from taking any action with respect to the Filing;
- the action of the Commission or the Staff, acting pursuant to delegated authority, in declaring the Filing effective, does not relieve the undersigned registrant from its full responsibility for the adequacy and accuracy of the disclosure in the Filing; and
- the undersigned registrant may not assert Staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Very truly yours,

AcelRx Pharmaceuticals, Inc.

/s/ Timothy E. Morris

By: Timothy E. Morris
Chief Financial Officer

cc: Mark B. Weeks
Cooley LLP