

VIA FACSIMILE AND EDGAR

February 1, 2011

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, DC 20549-4720

Attn: Jeffrey P. Riedler
Christine Allen
Lisa Vanjoske
Dan Greenspan
Sebastian Gomez Abero

**Re: AcelRx Pharmaceuticals, Inc.
Registration Statement on Form S-1 (File No. 333-170594)**

Dear Mr. Riedler:

Pursuant to Rule 461 under the Securities Act of 1933, as amended (the "Act"), we, as the representative of the underwriters, hereby join AcelRx Pharmaceuticals, Inc. in requesting that the effective date of the above-referenced registration statement be accelerated to February 3, 2011, at 2:00 p.m., Eastern Time, or as soon thereafter as practicable.

In connection with this acceleration request and pursuant to Rule 418(a)(7) and Rule 460 under the Act, please be advised that from January 20, 2011 through the date hereof, the undersigned effected the following approximate distribution of copies of the Preliminary Prospectus dated January 20, 2011:

- 0 to prospective underwriters;
- 250 to 250 institutional investors;
- 50 to 5 prospective dealers; and
- 25 to others.

This is to further advise you that the underwriters have complied and will continue to comply with Rule 15c2-8 under the Securities Exchange Act of 1934, as amended.

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Very truly yours,

PIPER JAFFRAY & CO.

By: PIPER JAFFRAY & CO.

By: /s/ Christie Christina
Christie Christina, Authorized Officer

as representative of the several underwriters

cc: Richard A. King, AcelRx Pharmaceuticals, Inc.
Mark B. Weeks, Cooley LLP
Chadwick L. Mills, Cooley LLP
David W. Pollak, Morgan, Lewis & Bockius LLP
Albert Lung, Esq., Morgan, Lewis & Bockius LLP

Signature Page to Acceleration Request Letter