VIA FACSIMILE AND EDGAR

February 4, 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 8, 2011, at 3:30 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.

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