

VIA FACSIMILE AND EDGAR

May 10, 2011

Jeffrey Riedler
Assistant Director
Division of Corporation Finance
United States Securities and Exchange Commission
100 F Street, N.E., Mail Stop 3030
Washington, DC 20549
Facsimile No. (202) 772-9291

**Re: ADVENTRX Pharmaceuticals, Inc.
Post-Effective Amendment No. 4 to Registration Statements on Form S-1 (Nos. 333-160778 and 333-162361)**

Ladies and Gentlemen:

Pursuant to Rule 461 under the Securities Act of 1933, as amended, ADVENTRX Pharmaceuticals, Inc. (the "Company") hereby requests acceleration of the above-referenced Post-Effective Amendment No. 4 to the registration statements on Form S-1 (Nos. 333-160778 and 333-162361), so that it will become effective at 9:00 a.m., Eastern Daylight Time, on Wednesday, May 11, 2011, or as soon thereafter as reasonably practicable, or at such later time as the Company may request by telephone to the Commission. The Company hereby authorizes both Michael Kagnoff and Larry Nishnick of DLA Piper LLP (US), counsel for the Company, to make such request on its behalf.

The Company hereby acknowledges that: (i) should the Commission or 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; (ii) the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the Company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and (iii) the Company 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.

Thank you for your assistance. If you should have any questions, please call Larry Nishnick of DLA Piper LLP (US), counsel to the Company, at (858) 677-1414.

Very truly yours,

ADVENTRX Pharmaceuticals, Inc.

By: /s/ Patrick L. Keran
Patrick L. Keran
President and Chief Operating Officer

cc: Shana Hood, Associate General Counsel
Michael S. Kagnoff, DLA Piper LLP (US)
Larry W. Nishnick, DLA Piper LLP (US)