

Patrick L. Keran
Vice President, Legal
ADVENTRX Pharmaceuticals, Inc.
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SENT VIA EDGAR

July 21, 2009

United States Securities and Exchange Commission
Division of Corporate Finance
100 F Street, N.E.
Mail Stop 6010
Washington, D.C. 20549

Attention: Jeffrey P. Riedler, Assistant Director

Re: ADVENTRX Pharmaceuticals, Inc.
File Number: 001-32157
Preliminary Proxy Statement
Filed July 7, 2009

Dear Mr. Riedler:

Thank you for your comment letter of July 16, 2009 (the "Comment Letter") on our Preliminary Proxy Statement (the "Proxy Statement"). We submit to you the following information in response to the Comment Letter. For your convenience, we have repeated each comment and set forth our response immediately after each comment.

Share Issuance and Use of Proceeds

- Please revise your disclosure to clearly indicate the number of shares you anticipate issuing in the public offering first discussed on page 5 of the filing. Please also include a discussion of the anticipated use of proceeds to be received in such offering.*

Response: We have revised the disclosure on page 5 of the Proxy Statement to state that we are in the process of determining the number of shares we anticipate issuing in the public offering. The determination will be based, in part, on market conditions at the time the registration statement is filed, as well as when it is declared effective, the status of regulatory submissions to the U.S. Food and Drug Administration and the outcome of discussions with the U.S. Food and Drug Administration regarding the bioequivalence data from our recently complete study of ANX-514.

Currently, we intend to use the net proceeds from the anticipated offering to fund activities relating to seeking approval by the U.S. Food and Drug Administration to market our product candidates ANX 530 and ANX-514 in the United States, pre-launch activities related to commercialization of ANX-530, and for general corporate purposes, including working capital. We have added this disclosure on Page 5 of the Proxy Statement.

Authorized Shares

- Please revise your disclosure to describe any plans, arrangements or understandings relating to the issuance of any of the newly authorized shares that would be available as a result of the proposed reverse stock split and the proposed increase in authorized shares. If you have no such plans, arrangements or understandings, please revise your disclosure to so state.*

Response: As discussed on page 5 of the Proxy Statement, we plan to file a registration on Form S-1, and once the registration statement is declared effective, we intend to offer securities to certain investors pursuant to that registration statement (the "Offering"). We have retained Rodman & Renshaw LLC to assist us with the Offering. Other than with respect to the Offering, we have no plans, arrangements or understandings relating to the issuance of any of the newly authorized shares that would be available as a result of the proposed increase in authorized shares or the proposed reverse stock split. We have added this disclosure on Page 5 of the Proxy Statement.

3. *Please revise your disclosure to provide a discussion as to whether the company's authorized shares will be proportionately reduced as a result of the proposed reverse stock split and to quantify the number of shares that will be authorized following the proposed increase in authorized shares and the reverse stock split given both a 2:1 reverse split and a 50:1 reverse split.*

Response: We refer you to page 14 of the Proxy Statement "Effect on Authorized but Unissued Shares of Common Stock and Preferred Stock" which states that we do not intend to reduce the number of authorized shares of our common stock as a result of the reverse stock split. To further clarify this point, we have added disclosure on page 6 of the Proxy Statement under the heading "What effect will the proposals have on the Company's authorized shares of common stock?" to read as follows:

"Currently, we have authorized 200,000,000 shares of common stock. If Proposal 1 is approved by our stockholders, upon filing the Proposal 1 Certificate of Amendment with the Delaware Secretary of State, the authorized number of shares of our common stock will increase from 200,000,000 shares to 500,000,000 shares. If the reverse stock split is implemented, we will not proportionately reduce the number of our authorized shares, regardless of whether Proposal 1 is approved. As a result, the number of our authorized shares of common stock will remain at either 200,000,000 shares or 500,000,000 shares, regardless of our whether we implement the reverse stock split or the ratio at which we implement the reverse stock split."

Additionally, as requested in the Comment Letter, the Company acknowledges:

- the Company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the Company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

If you have any further questions or wish to discuss the responses we have provided above, please call me at (858) 552-0866 x301 at your convenience.

Sincerely,

/s/ Patrick L. Keran

Patrick L. Keran
Vice President, Legal