

ADVENTRX PHARMACEUTICALS ANNOUNCES FINANCING

SAN DIEGO – May 3, 2010 – ADVENTRX Pharmaceuticals, Inc. (NYSE Amex: ANX) announced today that it has signed agreements to purchase shares of its Series F convertible preferred stock pursuant to a registered direct offering to institutional investors, representing gross proceeds to ADVENTRX of approximately \$19.2 million. ADVENTRX plans to use the net proceeds from the offering to fund activities relating to acquiring and developing additional product candidates, to continue development of its current lead product candidates, and for general corporate purposes.

The convertible preferred stock is convertible into shares of ADVENTRX's common stock at the option of the investors at a conversion price of \$3.7025 per share and will accrue a 2.19446320054018% cumulative dividend until May 6, 2020. If the convertible preferred stock is converted at any time prior to May 6, 2020, ADVENTRX will pay the holder an amount equal to the total dividend that would accrue on the convertible preferred stock from the conversion date through May 6, 2020, or approximately \$219.45 per \$1,000 stated value of convertible preferred stock converted, less any dividend payments made with respect to the converted convertible preferred stock. Approximately \$4.2 million of the gross proceeds will be placed in an escrow account, which amounts will be released to make the dividend and other payments described above.

The investors also will receive series A warrants to purchase an aggregate of 1,816,609 shares of ADVENTRX's common stock. The series A warrants will have an exercise price of \$3.65 per share and are exercisable at any time after the closing of the transaction and before the 5-year anniversary of their initial exercise date. The investors also will receive series B warrants to purchase an aggregate of 778,547 shares of ADVENTRX's common stock. The series B warrants also will have an exercise price of \$3.65 per share and are exercisable at any time after the closing of the transaction and before the date that is 10 trading days after the 1 year anniversary of their initial exercise date.

The closing of the offering is expected to take place on or before May 6, 2010, subject to the satisfaction of customary closing conditions.

The convertible preferred stock and warrants, and the common stock issuable upon conversion and exercise of the convertible preferred stock and warrants, are being offered by ADVENTRX pursuant to an effective registration statement(s) on Form S-3 filed with the Securities and Exchange Commission ("SEC"). A prospectus relating to the offering will be filed with the SEC.

Rodman & Renshaw, LLC, a wholly owned subsidiary of Rodman & Renshaw Capital Group, Inc. (NasdaqGM: RODM), acted as the exclusive placement agent for the transaction. Caris & Company Inc. acted as financial advisor to ADVENTRX in connection with the transaction.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of the securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction. The securities may only be offered by means of a prospectus. Copies of the prospectus can be obtained directly from Rodman & Renshaw, LLC at 1251 Avenue of the Americas, 20th Floor, New York, NY 10020, or from the SEC's website at www.sec.gov.

About ADVENTRX Pharmaceuticals

ADVENTRX Pharmaceuticals is a specialty pharmaceutical company whose product candidates are designed to improve the performance of existing cancer treatments by addressing limitations associated principally with their safety and use. More information can be found on the Company's web site at www.adventrx.com.

Forward Looking Statement

ADVENTRX cautions you that statements included in this press release that are not a description of historical facts are forward-looking statements that involve risks and assumptions that, if they materialize or do not prove to be accurate, could cause ADVENTRX's results to differ materially from historical results or those expressed or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to: ADVENTRX's dependence on the success of ANX-530 (vinorelbine injectable emulsion), or Exelbine™, and ANX-514, and uncertainty as to whether either product candidate will receive regulatory approval on a timely basis, or at all, or be commercialized successfully; uncertainty regarding additional product candidates ADVENTRX may seek to acquire and the costs associated with developing and seeking approval of any such product candidates; the potential for regulatory authorities to require additional preclinical work and/or clinical activities to support regulatory filings, including prior to the filing or the approval of an NDA for Exelbine and/or ANX-514, which activities may increase the cost and timeline to NDA filing or approval and negatively impact ADVENTRX's ability to raise additional capital or partner its lead product candidates; the risk that ADVENTRX will pursue development activities at levels or on timelines, or will incur unexpected expenses, that shortens the period through which its operating funds will sustain it; the potential that changes made in transferring the manufacturing process for Exelbine and/or ANX-514 may result in a lack of comparability between the commercial product and the material used in clinical trials, and that FDA may require ADVENTRX to perform additional non-clinical or clinical studies; the risk the FDA will determine that Exelbine and Navelbine® and/or ANX-514 and Taxotere are not bioequivalent, including as a result of performing bioequivalence analysis based on a patient population other than the population on which ADVENTRX based its analysis or determining that increased docetaxel blood-levels during and immediately following infusion are clinically relevant; difficulties or delays in manufacturing, obtaining regulatory approval for and marketing Exelbine and/or ANX-514, including validating commercial manufacturing processes and manufacturers, as well as suppliers, and the potential for automatic injunctions regarding FDA approval of ANX-514; ADVENTRX's reliance on the performance of third parties to assist in the conduct of its bioequivalence trials, regulatory submissions, CMC activities and other important aspects of the Exelbine and ANX-514 development programs, including on-going stability studies for Exelbine and analysis of the ANX-514 bioequivalence trial data, and that such third parties may fail to perform as expected; the risk that the financing announced in this press release does not close; and other risks and uncertainties more fully described in ADVENTRX's press releases and in the prospectus relating to this offering, which will be filed with the Securities and Exchange Commission. ADVENTRX's public filings with the Securities and Exchange Commission are available at www.sec.gov.

You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date when made. ADVENTRX does not intend to update any forward-looking statement as set forth in this press release to reflect events or circumstances arising after the date on which it was made.

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