UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 27, 2010

ADVENTRX Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-32157**	**84-1318182**
(State or other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

6725 Mesa Ridge Road, Suite 100 **San Diego, CA**	**92121**
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: **(858) 552-0866**

N/A
(Former name or former address if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 8.01. Other Events.

On April 27, 2010, ADVENTRX Pharmaceuticals, Inc. issued a press release announcing its plans to resubmit its new drug application for ANX-530 (vinorelbine injectable emulsion), or Exelbine™, to the U.S. Food and Drug Administration in the fourth quarter of 2010. The press release is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

The list of exhibits called for by this Item is incorporated by reference to the Exhibit Index filed with this report.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

ADVENTRX Pharmaceuticals, Inc.

Dated: April 27, 2010

By: /s/ Patrick Keran
Name: Patrick Keran
Title: President and Chief Operating Officer

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release, dated April 27, 2010

Exhibit 99.1

ADVENTRX TO RESUBMIT ANX-530 NDA IN THE FOURTH QUARTER OF 2010

SAN DIEGO (April 27, 2010) – ADVENTRX Pharmaceuticals, Inc. (NYSE Amex: ANX) today announced that, based on information received from the U.S. Food and Drug Administration (FDA), the Company plans to resubmit its New Drug Application (NDA) for ANX-530 (vinorelbine injectable emulsion), or Exelbine™, in the fourth quarter of 2010.

"We are pleased to have clarified with the FDA certain matters concerning the stability data necessary to file the Exelbine NDA," said Brian M. Culley, Chief Executive Officer of ADVENTRX. "The studies that will generate the stability data from our intended commercial manufacturing site that the FDA wishes to see are ongoing, and we plan to resubmit the NDA in the fourth quarter of this year."

ADVENTRX submitted an NDA for ANX-530 to the FDA in December 2009. The Company announced on March 1, 2010 that it had received a refusal-to-file letter from the FDA regarding that submission. In the letter, the FDA indicated that the data included in the December 2009 NDA submission from the intended commercial manufacturing site was insufficient to support a commercially-viable expiration dating period. The FDA identified only this one chemistry, manufacturing and controls (CMC) reason for the refusal to file. No clinical or nonclinical issues were identified.

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 Statements
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: the risk that the FDA does not accept a resubmitted ANX-530 NDA for review, including as a result of identifying clinical or nonclinical reasons for a refusal-to-file or identifying currently unidentified CMC reasons for a refusal-to-file; the risk that future stability testing results are not consistent with prior results or are out-of-specification and do not support comparability between manufacturing sites; ADVENTRX's dependence on the success of ANX-530, and increased uncertainty as to whether ANX-530 will receive regulatory approval or be commercialized successfully; the risk that the bioequivalence data and other information included in the ANX-530 NDA may not adequately support bioequivalence with Navelbine®; the potential that changes made in transferring the manufacturing process for ANX-530 may result in a lack of comparability between the commercial product and the material used in the bioequivalence trial, and that the FDA may require ADVENTRX to perform additional nonclinical, bioequivalence or clinical studies; the potential for the FDA to impose other requirements to be completed before or after approval of the ANX-530 NDA; 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 risk that ADVENTRX will be unable to raise sufficient additional capital to commercialize ANX-530, if an ANX-530 NDA is resubmitted, accepted for filing and ultimately approved; and other risks and uncertainties more fully described in ADVENTRX's press releases and periodic filings 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 revise or update any forward-looking statement set forth in this press release to reflect events or circumstances arising after the date on which it was made.

Company Contact:
ADVENTRX Pharmaceuticals
Brian Culley, Chief Executive Officer
858-552-0866

Investor Contact:
Lippert/Heilshorn & Associates, Inc.
Don Markley (dmarkley@lhai.com)
310-691-7100

# # #