

SENT VIA FACSIMILE: 202-772-9217
AND VIA EDGAR

July 27, 2007

Mr. James Rosenberg
Senior Assistant Chief Accountant
United States Securities and Exchange Commission
Mail Stop 6010
Washington, D.C. 20549

Re: ADVENTRX Pharmaceuticals, Inc.
File Number: 001-32157
Form 10-K for the Fiscal Year Ended December 31, 2006
Filed March 15, 2007

Dear Mr. Rosenberg:

Subsequent to discussions that we have held with both your staff and the Office of the Associate Chief Accountant, and following our initial response on June 11, 2007 to your comment letter of May 10, 2007 on our Annual Report on Form 10-K (the "Form 10-K") for the year ended December 31, 2006 (the "Comment Letter"), we submit the following additional comments. For your convenience, we have repeated the Commission's comments only in the areas that we are providing you with supplemental information to our initial response dated June 11, 2007.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 43

Critical Accounting Policies and Estimates, page 44

Clinical Trial Expenses, page 45

1. Please clarify if the 3% variance in your estimate of the work completed is the reasonably likely change in the estimate and if so, please provide to us, using disclosure-type format, a discussion of the reason management believes it is reasonably likely. Otherwise, propose revisions to include the change in estimate that is reasonably likely with a discussion supporting it.

Response:

We have revised our initial response submitted to you on June 11, 2007, based on subsequent discussions with your staff. To improve our disclosure in future filings, we will include substantially in the following form the revised disclosure in the critical accounting policies in our Form 10-Q to be filed for the quarter ending June 30, 2007 and subsequent periodic reports:

“Historically, we have had no material changes in our clinical trial expense accruals that would have a material impact on our consolidated results of operations or financial position. Our clinical trials are often conducted under contracts with multiple research institutions and clinical research organizations that conduct and manage clinical trials on our behalf. The financial terms of these agreements are subject to negotiation and vary from contract to contract and may result in uneven payment flows. Generally, these agreements set forth the scope of work to be performed at a fixed fee or unit price or on a time-and-material basis. Payments under these contracts depend on factors such as the successful enrollment of patients or the completion of other clinical trial milestones. Expenses related to clinical trials are accrued based on our estimates and/or representations from service providers regarding work performed, including actual level of patient enrollment, completion of patient studies, and clinical trials progress. Other incidental costs related to patient enrollment are accrued when reasonably certain. If the contracted amounts are modified (for instance, as a result of changes in the clinical trial protocol or scope of work to be performed), we modify our accruals accordingly on a prospective basis. Revisions in scope of contract are charged to expense in the period in which the facts that give rise to the revision become reasonably certain. Because of the uncertainty of possible future changes to the scope of work in clinical trials contracts, we are unable to quantify an estimate of the reasonably likely effect of any such changes on our consolidated results of operations or financial position.”

Index to Consolidated Financial Statements, page F-1

Report of Independent Registered Public Accounting Firm, page F-2

3. As your auditor has relied on the report of another auditor, please provide us a copy of the manually signed report of the other auditor provided to you as part of your preparation of your December 31, 2006 Form 10-K, as it should have been included in your filing. Please refer to Rule 2-05 of Regulation S-X. Further, please ensure that it makes reference to the standards of the Public Company Oversight Board of the United States as the basis for the audits performed as the reports will have been reissued subsequent to the issuance of PCAOB Auditing Standard No. 1.

Response:

Subsequent to receiving your comments, we contacted the Office of the Associate Chief Accountant in the Division of Corporation Finance to request a waiver to Rule 2-05 of Regulation S-X regarding the requirement that we file a separate report of our predecessor accountant. The Office of the Associate Chief Accountant would not waive the requirements of Rule 2-05, but stated that given our facts and circumstances, would not object if our principal independent accountant’s report does not make reference to either the cumulative amounts since inception required by SFAS 7, paragraphs 11b and 11c or to the statement of stockholders’ equity disclosure required by SFAS 7, paragraph 11d for the periods from June 12, 1996 (date of inception) to December 31, 2001. Our principal independent accountant has agreed to revise its report to exclude such references, and is included for your reference in Attachment A.

Note 7, Warrant Liability, page F-21

5. Please tell us why it is appropriate to record negative additional paid in capital in connection with the 10 million shares of stock issued so that essentially none of the proceeds are allocated to the common stock.

Response:

In our initial response dated June 11, 2007, we provided references to the accounting literature that supports the accounting treatment for the fair value of the liability of the registration payment arrangement in the July 2005 financing transaction, including references to EITF Issue No. 00-19, *Accounting for Derivative Financial Instruments Indexed To, and Potentially Settled in a Company's Own Stock* ("EITF 00-19"). Further, we explained that because the fair value of the contingent obligation was greater than the net proceeds from the financing, we reclassified the entire net proceeds received at the closing date from additional paid-in capital to current liabilities and recognized the excess of the fair value of the liability as a loss on the July 2005 financing transaction in our consolidated statement of operations. Also part of the accounting for the transaction, we re-classified \$10,811 from additional paid-in capital to common stock par value, to account for the issuance of the shares of par value common stock for essentially no net consideration.

Subsequent to our discussion with your staff, and after our review with outside counsel, we are supplementing our response to confirm that we believe that Delaware General Corporation Law (we are incorporated in the State of Delaware) does not prevent us from reducing additional paid-in capital to offset the par value of \$10,811 associated with shares issued in connection with the transaction.

Additionally, per the Comment Letter, the Company acknowledges:

- the Company is responsible for the adequacy and accuracy of the disclosure in its filings with the SEC;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filings; 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 858-768-6316 at your convenience.

Sincerely,

/s/ GREGORY P. HANSON

Gregory P. Hanson CMA
Senior Vice President and
Chief Financial Officer

Cc: Mark N.K. Bagnall, Audit Committee Chair
Patrick Keran, Vice President, Legal and General Counsel

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders
ADVENTRX Pharmaceuticals, Inc.

We have audited the accompanying consolidated balance sheets of ADVENTRX Pharmaceuticals, Inc. and Subsidiaries (a development stage enterprise) as of December 31, 2006 and 2005, and the related consolidated statements of operations, stockholders' equity (deficit) and cash flows for each of the three years in the period ended December 31, 2006 and for the period from January 1, 2002 to December 31, 2006. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of ADVENTRX Pharmaceuticals, Inc. and Subsidiaries (a development stage enterprise) as of December 31, 2006 and 2005, and the results of operations and their cash flows for each of the years in the three-year period ended December 31, 2006 and for the period from January 1, 2002 to December 31, 2006, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of ADVENTRX Pharmaceuticals, Inc. and Subsidiaries' internal control over financial reporting as of December 31, 2006, based on criteria established in "Internal Control Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 23, 2007 expressed an unqualified opinion on management's assessment of internal control over financial reporting and an unqualified opinion of the effectiveness of internal control over financial reporting.

/s/ J.H. Cohn LLP
San Diego, California
February 23, 2007