



DLA Piper LLP (US)
4365 Executive Drive, Suite 1100
San Diego, California 92121-2133
www.dlapiper.com

Michael S. Kagnoff
michael.kagnoff@dlapiper.com
T 858.638.6722
F 858.638.5122

VIA FACSIMILE AND EDGAR

June 13, 2011

Mr. Johnny Gharib
Division of Corporation Finance
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 205549

**Re: Adventrx Pharmaceuticals, Inc.
Registration Statement on Form S-3
File No. 333-174203**

Dear Mr. Gharib:

This letter responds to the letter we received from the staff (the "Staff") of the Securities and Exchange Commission (the "Commission") on May 31, 2011 regarding the Registration Statement on Form S-3, File No. 333-174203 (the "Registration Statement"), filed by Adventrx Pharmaceuticals, Inc. (the "Company") on May 13, 2011.

This letter sets forth the comment of the Staff in the comment letter and, following the comment, sets forth the Company's response.

1. **We note that, in addition to 662,078 shares of Adventrx common stock issued to the selling stockholders pursuant to the terms of the Merger Agreement with SynthRx, you are attempting to register the resale of the following shares:**
 - a. **200,000 shares of common stock currently held in escrow;**
 - b. **1,938,773 shares of common stock that are subject to vesting and may be repurchased by Adventrx under certain circumstances; and**
 - c. **13,478,050 shares of common stock that are issuable upon the achievement of certain performance milestones.**

With respect to the first tranche of shares above, please provide your legal analysis why Question 216.09 of the Compliance and Disclosure Interpretations for Securities Act Forms should not be applied in this case or amend your registration statement to remove the 200,000 escrow shares from registration consistent with General Instruction I.B.3.



Mr. Johnny Gharib
Division of Corporation Finance
June 13, 2011
Page Two

Similarly, please provide your legal analysis why the remaining two tranches of shares above are ripe for registration. We note that you are attempting to register the resale of such shares by the selling shareholders, yet (i) the ability of the shareholders to transfer the 1,938,773 is subject to vesting, which may never occur; and (ii) the other 13,478,050 shares have not yet been issued and may never be outstanding if the performance milestones set forth in the Merger Agreement do not occur.

Factual Background:

As provided in the Registration Statement, in April 2011, the Company completed its acquisition (the "Merger") of SynthRx, Inc., a privately-held, Delaware corporation ("SynthRx"), pursuant to the terms of an Agreement and Plan of Merger, dated February 12, 2011 (the "Merger Agreement"). At the closing of the Merger, the Company acquired all of the outstanding securities of SynthRx, and SynthRx became a wholly-owned subsidiary of the Company.

Under the Merger Agreement, the selling stockholders listed in the Registration Statement received the right to receive the following securities from the Company, without paying the Company any additional consideration or performing any additional acts:

(i) 662,078 shares of the Company's common stock (the "Common Stock"), which the Company issued to the selling stockholders at the closing of the Merger.

(ii) up to 200,000 shares of Common Stock, which the Company issued to an escrow account on behalf of the selling stockholders at the closing of the Merger. These shares will be returned to the Company if the Company makes a valid claim for indemnification under the terms of the Merger Agreement.

(iii) up to 1,938,773 shares of Common Stock, which the Company issued to the selling stockholders at the closing of the Merger, but are subject to repurchase by the Company. The Company's repurchase right terminates, and the selling stockholders obtain a vested interest in these shares, subject to reduction upon certain events, upon achievement of the First Milestone (as defined below).

(iv) up to 1,000,000 shares of Common Stock (the "First Milestone Shares"), which are issuable to the selling stockholders upon achievement of the First Milestone (the "First Milestone Payment"); provided, however, that in the event the First Milestone is achieved prior to the first anniversary of the closing of the Merger, 20% of the First Milestone Payment shall be deposited into the escrow account. The "First Milestone" means the dosing of the first patient in a phase 3 clinical study carried out pursuant to a protocol that is mutually agreed to by SynthRx and the Company; provided, however, that the number of evaluable patients planned to target statistical significance with a p value of 0.01 in the primary endpoint shall not exceed 250 (unless otherwise mutually agreed) (the "First Protocol"). In the event that the FDA indicates that a single phase 3 clinical study will not be adequate to support approval of a new drug application covering the use of ANX-188 for the treatment of sickle cell crisis in children (the "ANX-188 NDA"), "First Milestone" shall mean the dosing of the first patient in a phase 3 clinical study carried out pursuant to a protocol that (a) is mutually agreed to by SynthRx and the Company as such and (b) describes a phase 3 clinical study that the FDA has indicated may be sufficient, with the phase 3 clinical study described in the First Protocol, to support approval of the ANX-188 NDA.



Mr. Johnny Gharib
Division of Corporation Finance
June 13, 2011
Page Three

(v) 3,839,400 shares of Common Stock (the "Second Milestone Shares"), which are issuable to the selling stockholders upon achievement of the Second Milestone (the "Second Milestone Payment"). The "Second Milestone" shall mean the acceptance for review of the ANX-188 NDA by the FDA.

(vi) 8,638,650 shares of Common Stock (the "Third Milestone Shares"), which are issuable to the selling stockholders upon achievement of the Third Milestone (the "Third Milestone Payment"). The "Third Milestone" shall mean the approval by the FDA of the ANX-188 NDA.

The Company's issuance of the First Milestone Shares, the Second Milestone Shares and the Third Milestone Shares (collectively, the "Milestone Shares") is also subject to the Company's receipt of stockholder approval for the issuance of these shares at the Company's annual meeting of stockholders scheduled for June 15, 2011 (the "Annual Meeting"). As an NYSE Amex listed company, the Company is required to obtain stockholder approval prior to issuing shares of Common Stock where the present or potential issuance of the shares as consideration for an acquisition of the stock or assets of another company could result in an increase in the Company's outstanding common shares of 20% or more. Because the potential issuance of the Milestone Shares, together with the additional shares issued pursuant to the Merger Agreement, could exceed 20% of the Company's outstanding common shares as of the closing date of the Merger, the Company is seeking approval of the issuance of the Milestone Shares in lieu of cash payments to the former SynthRx stockholders, if and when the applicable milestones are achieved. The Company agreed in the Merger Agreement to seek stockholder approval to issue the Milestone Shares at the Annual Meeting.

Legal Background:

General Instruction I.B.3 to Form S-3 provides that an issuer is eligible to use Form S-3 to register "[o]utstanding securities to be offered for the account of any person other than the issuer, . . . if securities of the same class are listed and registered on a national securities exchange or are quoted on the automated quotation system of a national securities association."



Mr. Johnny Gharib
Division of Corporation Finance
June 13, 2011
Page Four

In its Compliance and Disclosure Interpretations ("C&DIs") for the Securities Act Forms, the Staff previously addressed whether shares that are issuable in a merger transaction, but are not yet outstanding, can be registered on Form S-3 pursuant to General Instruction I.B.3. Specifically, Question 116.05 provides:

"Question: In reliance on Securities Act Section 4(2), a merger transaction will not be registered. May resales of earnout shares to be issued in connection with the merger be registered on Form S-3 pursuant to General Instruction I.B.3 after the consummation of the merger, even though the shares have not been earned and are not outstanding at the time the registration statement is filed?"

Answer: Yes. [Feb. 27, 2009]"

Legal Analysis

The shares of the Company's Common Stock issued or issuable under the terms of the Merger Agreement are eligible for registration on Form S-3 immediately following the closing of the Merger because the shares of Common Stock are either (i) actually outstanding or (ii) qualify as "earnout" shares in accordance with C&DI Question 116.05.

Shares Issued at Closing: As recognized by the Staff, the Company issued 662,078 shares of Common Stock to the selling stockholders at the closing of the Merger, and as a result, these shares are "issued and outstanding" shares. Similarly, the Company issued 1,938,773 shares of Common Stock to the selling stockholders at the closing of the Merger. Although these shares are subject to repurchase rights in favor of the Company, they are treated as "issued and outstanding" shares on the Company's stock records. The Company has restricted the selling stockholders from transferring these shares until the Company's repurchase rights lapse, and the selling stockholders obtain a vested interest in such shares. The restriction on transfer is intended to protect the Company's ability to exercise its repurchase rights in the future, but does not change the treatment of these shares as "issued and outstanding" shares on the Company's stock records.

Escrow Shares: With respect to the 200,000 escrow shares, the Company issued these shares on behalf of the selling stockholders to an escrow account at the closing of the Merger. The escrow shares are "issued and outstanding" shares on the Company's stock records. If the Company makes a valid claim for indemnification under the terms of the Merger Agreement, the shares will be released from the escrow account and returned to the Company in satisfaction of its indemnification claim. If the Company does not make a valid claim for indemnification during the escrow period, the escrow shares will be released from the escrow account to the selling stockholders.



Mr. Johnny Gharib
Division of Corporation Finance
June 13, 2011
Page Five

The Staff requested the Company to analyze whether the escrow shares are eligible for registration on Form S-3 in light of the Staff's guidance in C&DI Question 216.09. Specifically, C&DI Question 216.09 provides:

"Pursuant to a private placement, securities were to be issued into an escrow account upon partial payment equal to the securities' par value. The issuer contemplated that the securities would be released from escrow upon payment of the remainder of the market price, simultaneously with effectiveness of a Form S-3 for resale of the securities. Although the securities would be considered outstanding under Delaware law at the time of issuance into escrow, they would not be "outstanding" for purposes of General Instruction I.B.3. In addition, the use of the escrow arrangement and the de minimis down payment suggests that the offering was in substance a "primary offering" for purposes of Form S-3 eligibility. [Feb. 27, 2009]"

The fact pattern considered by the Staff in Question 216.09 involves a private placement of securities in which the investors only invested a nominal portion (i.e., the par value) of the total purchase price for the securities prior to the issuer filing a registration statement on Form S-3. The issuer placed the shares in an escrow account pending the future payment of the remainder of the purchase price by the investors. Because the investors had not fully paid for the shares, the Staff determined that the shares were not outstanding for purposes of General Instruction I.B.3. The Staff also noted that because the issuance of the shares was contingent upon, and would not be effected until, the registration statement was declared effective, the proposed offering by the issuer was in fact a "primary offering" and not a "secondary offering."

In contrast, the shares of Common Stock issued by the Company to the escrow account on behalf of the selling stockholders are "fully paid" shares under the terms of the Merger Agreement. The selling stockholders are not required to make any additional payments or take any additional actions to be eligible to receive the shares held in the escrow account. In fact, the shares in the escrow account will only be returned to the Company if the Company can establish a valid indemnity claim under the terms of the Merger Agreement.

Based on the terms of the Merger Agreement, we respectfully submit that the 200,000 escrow shares are "outstanding" shares for purposes of General Instruction I.B.3.

Milestone Shares: Under the terms of the Merger Agreement, the Company may be required to issue 13,478,050 additional Milestone Shares upon the occurrence of the First Milestone, the Second Milestone and the Third Milestone. We respectfully submit that these shares were eligible for registration on Form S-3 immediately following the closing the Merger in accordance with the Staff's guidance provided in C&DI Question 116.05.



Mr. Johnny Gharib
Division of Corporation Finance
June 13, 2011
Page Six

In Question 116.05, the Staff confirmed that earnout shares in a merger context are eligible for registration on Form S-3. Although using different terminology, there is no meaningful legal distinction between "earnout shares" and "milestone shares." In both cases, the issuer is contractually obligated under the terms of the merger or purchase agreement to issue the shares upon the occurrence of future events, whether the events are based on financial metrics, the receipt of regulatory approvals or some other event.

Moreover, this interpretation is consistent with the Staff's position in C&DI Question 216.09. The Milestone Shares issuable by the Company to the selling stockholders upon the achievement of the applicable milestone event are fully paid under the terms of the Merger Agreement, without any requirement for the selling stockholders to provide the Company with any additional consideration or perform any additional acts. As a result, the 13,478,050 Milestone Shares are eligible for registration on the Company's Registration Statement.

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 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.

If you require any additional information on this response, or if we can provide you with any other information that will facilitate your continued review of the Registration Statement, please advise us at your earliest convenience. You may reach me at (858) 638-6722.

Very truly yours,

DLA Piper LLP (US)

/s/ Michael S. Kagnoff

Michael S. Kagnoff
Partner