

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

SCHEDULE 14A
(Rule 14a-101)

SCHEDULE 14A INFORMATION

Proxy Statement Pursuant to Section 14(a) of the
Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant
Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

ADVENTRX PHARMACEUTICALS, INC.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(4) and 0-11.

1) Title of each class of securities to which transaction applies:

2) Aggregate number of securities to which transaction applies:

3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

4) Proposed maximum aggregate value of transaction:

5) Total fee paid:

Fee paid previously with preliminary materials.

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

1) Amount Previously Paid:

2) Form, Schedule or Registration Statement No.:

3) Filing Party:

4) Date Filed:

ADVENTRX PHARMACEUTICALS, INC.

6725 Mesa Ridge Road, Suite 100
San Diego, CA 92121

**NOTICE OF SPECIAL MEETING OF STOCKHOLDERS
To Be Held August 25, 2009**

The Special Meeting of Stockholders of ADVENTRX Pharmaceuticals, Inc. (the "Company") will be held on August 25, 2009 at 9:00 a.m. local time at the offices of DLA Piper LLP (US), 4365 Executive Drive, Suite 1100, San Diego, California 92121. The meeting is being held for the following purposes, as more fully described in the accompanying proxy statement:

1. To approve a proposal to increase the number of authorized shares of common stock from 200,000,000 shares to 500,000,000 shares, with a corresponding increase in the total number of shares which the Company is authorized to issue from 201,000,000 to 501,000,000, by filing a Certificate of Amendment to the Company's Amended and Restated Certificate of Incorporation;
2. To approve a proposal to give the Board of Directors the authority, at its discretion, to effect a reverse split of the Company's common stock by filing a Certificate of Amendment to the Company's Amended and Restated Certificate of Incorporation; and
3. To transact such other business as may properly come before the meeting.

The Board of Directors has approved, and recommends that you vote in favor of, Proposal 1 and Proposal 2 described above.

July 17, 2009 has been fixed as the record date for determining those stockholders entitled to vote at the Special Meeting. Accordingly, only stockholders of record at the close of business on that date will receive this notice of, and be eligible to vote at, the Special Meeting and any adjournment or postponement of the Special Meeting. The proposals are more fully described in the proxy statement that accompanies this notice.

Your vote is important. Please read the proxy statement and the instructions on the enclosed proxy card and then, whether or not you plan to attend the Special Meeting in person, and no matter how many shares you own, please submit your proxy promptly by signing, dating and returning your proxy card in the postage paid envelope provided. This will not prevent you from voting in person at the Special Meeting. It will, however, help to assure a quorum and to avoid added proxy solicitation costs.

You may revoke your proxy at any time before the vote is taken by delivering to the Company's Secretary a written revocation or a proxy with a later date or by voting your shares in person at the Special Meeting, in which case your prior proxy would be disregarded.

BY ORDER OF THE BOARD OF DIRECTORS



Brian M. Culley
Chief Business Officer and Senior Vice President

San Diego, CA
July 23, 2009

Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting To Be Held on August 25, 2009. The proxy statement is available at <https://www.proxydocs.com/anx>.

TABLE OF CONTENTS

	<u>Page</u>
<u>PROXY STATEMENT</u>	1
<u>Date, Time and Place</u>	1
<u>Purpose of the Special Meeting</u>	1
<u>Record Date; Shares Outstanding and Entitled to Vote</u>	1
<u>How to Vote Your Shares</u>	1
<u>How to Change Your Vote</u>	2
<u>Proxies; Counting Your Vote</u>	2
<u>Abstentions</u>	3
<u>Quorum and Required Votes</u>	3
<u>Solicitation of Proxies</u>	3
<u>Recommendation of the Board of Directors</u>	4
<u>QUESTIONS AND ANSWERS ABOUT THIS PROXY STATEMENT</u>	5
<u>PROPOSAL 1 APPROVAL OF AN AMENDMENT TO OUR AMENDED AND RESTATED CERTIFICATE OF INCORPORATION TO INCREASE THE NUMBER OF AUTHORIZED SHARES OF COMMON STOCK, WITH A CORRESPONDING INCREASE IN THE TOTAL NUMBER OF SHARES AUTHORIZED</u>	9
<u>Purpose of the Proposed Amendment</u>	9
<u>Effect of the Proposed Amendment</u>	10
<u>Anti-Takeover Effects</u>	10
<u>Approval Required</u>	10
<u>Recommendation of the Board of Directors</u>	10
<u>PROPOSAL 2 APPROVAL OF AN AMENDMENT TO OUR AMENDED AND RESTATED CERTIFICATE OF INCORPORATION TO EFFECT A REVERSE STOCK SPLIT OF OUR COMMON STOCK</u>	11
<u>Purpose of the Reverse Stock Split</u>	11
<u>Effects of the Reverse Stock Split</u>	12
<u>General</u>	12
<u>Effectiveness of Reverse Stock Split</u>	13
<u>Effect on the Company's Stock Plans</u>	13
<u>Effect on Authorized but Unissued Shares of Common Stock and Preferred Stock</u>	14
<u>Effect on Par Value</u>	14
<u>Reduction In Stated Capital</u>	14
<u>No Going Private Transaction</u>	14
<u>Book-Entry Shares</u>	14
<u>Exchange of Stock Certificates</u>	14
<u>Fractional Shares</u>	15
<u>No Appraisal Rights</u>	15
<u>Certain Federal Income Tax Consequences of the Reverse Stock Split</u>	16
<u>Approval Required</u>	17
<u>Recommendation of the Board of Directors</u>	17
<u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT</u>	18
<u>STOCKHOLDER PROPOSALS FOR 2010 ANNUAL MEETING</u>	20
<u>CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS</u>	20
<u>OTHER MATTERS</u>	20
<u>ANNEX A</u>	A-1
<u>ANNEX B</u>	B-1

ADVENTRX Pharmaceuticals, Inc.

6725 Mesa Ridge Road, Suite 100
San Diego, CA 92121
(858) 552-0866

PROXY STATEMENT

**SPECIAL MEETING OF STOCKHOLDERS
To Be Held On August 25, 2009**

Date, Time and Place

ADVENTRX Pharmaceuticals, Inc. (the "Company") is furnishing this proxy statement and the enclosed proxy card in connection with the solicitation of proxies by the Board of Directors of the Company (the "Board") for use at the Special Meeting of Stockholders to be held on August 25, 2009, at 9:00 a.m. local time, at the offices of DLA Piper LLP (US), 4365 Executive Drive, Suite 1100, San Diego, California 92121, and at any adjournments or postponements thereof (the "Special Meeting"). These materials are being mailed to stockholders on or about July 23, 2009.

Purpose of the Special Meeting

The Special Meeting has been called for the following purposes:

1. To approve a proposal to increase the number of authorized shares of common stock from 200,000,000 shares to 500,000,000 shares, with a corresponding increase in the total number of shares which the Company is authorized to issue from 201,000,000 to 501,000,000, by filing a Certificate of Amendment to the Company's Amended and Restated Certificate of Incorporation (the "Proposal 1 Certificate of Amendment");
2. To approve a proposal to give our Board the authority, at its discretion, to effect a reverse split of the Company's common stock by filing a Certificate of Amendment to the Company's Amended and Restated Certificate of Incorporation (the "Proposal 2 Certificate of Amendment"); and
3. To transact such other business as may properly come before the meeting.

Record Date; Shares Outstanding and Entitled to Vote

The Company has fixed July 17, 2009 as the record date for the determination of holders of Company common stock entitled to notice of and to vote at the Special Meeting and any adjournment or postponement of the Special Meeting. At the close of business on the record date, the Company had 113,044,357 shares of common stock issued and outstanding. No other shares of Company capital stock are entitled to notice of or to vote at the Special Meeting.

How to Vote Your Shares

If you hold your shares in your own name, you may submit a proxy by mail, or you may vote by attending the Special Meeting and voting in person.

- *Submitting a Proxy by Mail:* If you choose to submit a proxy by mail, simply mark the enclosed proxy card, date and sign it, and return it in the postage paid envelope provided.

By casting your vote by proxy, you are authorizing the individuals listed on the proxy to vote your shares in accordance with your instructions. You may also attend the Special Meeting and vote in person.

If your shares are held in the name of a bank, broker or other nominee, you will receive instructions from the holder of record that you must follow for your shares to be voted. The availability of telephonic or Internet voting will depend on the bank's or broker's voting process. Please check with your bank or broker and follow the voting procedure your bank or broker provides to vote your shares. Also, please note that if the holder of record of your shares is a broker, bank or other nominee and you wish to vote in person at the Special Meeting, you must

[Table of Contents](#)

request a legal proxy from your bank, broker or other nominee that holds your shares and present that proxy and proof of identification at the Special Meeting.

How to Change Your Vote

You may revoke your proxy at any time before it is exercised by:

- Delivering to the Company's Secretary a written notice of revocation, dated later than the proxy, before the vote is taken at the Special Meeting;
- Delivering to the Company's Secretary a duly executed proxy bearing a later date, before the vote is taken at the Special Meeting; or
- Attending the Special Meeting and voting in person (your attendance at the Special Meeting, in and of itself, will not revoke the proxy).

Any written notice of revocation, or later dated proxy, should be delivered to:

Adventrx Pharmaceuticals, Inc.
6725 Mesa Ridge Road, Suite 100
San Diego, CA 92121
Attention: Corporate Secretary

Alternatively, you may hand deliver a written revocation notice, or a later dated proxy, to the Secretary at the Special Meeting before we begin voting.

If your shares of Company common stock are held by a bank, broker or other nominee, you must follow the instructions provided by the bank, broker or other nominee if you wish to change your vote.

Proxies; Counting Your Vote

If you provide specific voting instructions, your shares will be voted at the Special Meeting in accordance with your instructions. If you hold shares in your name and sign and return a proxy card without giving specific voting instructions, your shares will be voted as follows:

- "FOR" approval of Proposal 1, which, when the Proposal 1 Certificate of Amendment is filed with the Delaware Secretary of State, will increase the number of authorized shares of common stock from 200,000,000 shares to 500,000,000 shares, with a corresponding increase in the total number of shares which the Company is authorized to issue from 201,000,000 to 501,000,000.
- "FOR" approval of Proposal 2, which, when the Proposal 2 Certificate of Amendment is filed with the Delaware Secretary of State, will effect a reverse stock split of our issued and outstanding common stock at a ratio that is not less than 2:1 nor greater than 50:1, with the final ratio to be selected by our Board in its discretion.

At this time, we are unaware of any matters, other than those set forth above, that may properly come before the Special Meeting. If any other matters properly come before the Special Meeting, the persons named in the enclosed proxy, or their duly constituted substitutes acting at the Special Meeting or any adjournment or postponement of the Special Meeting, will be deemed authorized to vote or otherwise act on such matters in accordance with their judgment.

The persons named in the enclosed proxy, or their duly constituted substitutes acting at the Special Meeting or any adjournment or postponement of the Special Meeting, may propose and vote for one or more adjournments or postponements of the Special Meeting, including adjournments or postponements to permit further solicitations of proxies. Proxies solicited may be voted only at the Special Meeting and any adjournment or postponement of the Special Meeting and will not be used for any other meeting of the Company's stockholders.

Officers of the Company will serve as proxy tabulator and count the votes. The results will be certified by the inspector(s) of elections.

Abstentions

An "abstention" occurs when a stockholder sends in a proxy with explicit instructions to decline to vote regarding a particular matter. Abstentions are counted as present for purposes of determining a quorum. However, an abstention with respect to a matter submitted to a vote of stockholders will not be counted as having been voted for or against the matter. Because approval of the proposals to be voted on at the Special Meeting requires the affirmative vote of the holders of a majority of the Company's outstanding shares of common stock, an abstention with respect to any of the matters scheduled for a vote at the Special Meeting will have the same effect as a vote "against" the proposal.

Quorum and Required Votes

A quorum, consisting of the holders of 56,522,179 shares (a majority of the aggregate number of shares of Company common stock issued and outstanding and entitled to vote as of the record date for the Special Meeting), must be present in person or by proxy before any action may be taken at the Special Meeting. Proxies marked "abstain" will be treated as shares that are present for purposes of determining the presence of a quorum.

Proposal 1: Proposal 1 to approve an amendment to our Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock, with a corresponding increase in the total number of shares authorized, requires the affirmative vote of the holders of a majority of the Company's outstanding shares of common stock. Any shares not voted (whether by abstention or otherwise) will have the same effect as a vote "Against" the proposal.

Proposal 2: Proposal 2 to approve an amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split requires the affirmative vote of the holders of a majority of the Company's outstanding shares of common stock. Any shares not voted (whether by abstention or otherwise) will have the same effect as a vote "Against" the proposal.

The directors and executive officers of the Company and their respective affiliates collectively owned on a beneficial basis approximately 10.4 million shares as of June 30, 2009. Assuming the exercise of all options and warrants held by the Company's directors and executive officers and their respective affiliates that were exercisable as of June 30, 2009 or within 60 days of such date, such shares represented approximately 9.2% of the total Company voting power as of such date. See the section entitled "Security Ownership of Certain Beneficial Owners and Management" beginning on page 18.

All share numbers in this proxy statement do not take into account the effect of the proposed amendments to our Amended and Restated Certificate of Incorporation, unless otherwise expressly indicated.

Solicitation of Proxies

We are soliciting proxies from stockholders on behalf of our Board and will pay for all costs incurred in connection with the solicitation. In addition to solicitation by mail, the directors, officers and employees of the Company and its subsidiaries may solicit proxies from our stockholders in person or by telephone, facsimile, e-mail or other electronic methods without additional compensation other than reimbursement for their actual expenses.

We may retain a proxy solicitation firm to assist us in the solicitation of proxies for the Special Meeting. We would pay such firm, if any, customary fees expected to be no more than \$15,000 and would reimburse the firm for its reasonable out-of-pocket expenses. We may also engage individuals (including our former employees) to assist us in the solicitation of proxies for the Special Meeting. We would pay such individuals an hourly rate for their services and would reimburse them for their reasonable out-of-pocket expenses.

Arrangements also will be made with brokerage firms and other custodians, nominees and fiduciaries for the forwarding of solicitation material to the beneficial owners of stock held of record by such persons, and we will reimburse such custodians, nominees and fiduciaries for their reasonable out-of-pocket expenses in connection therewith.

Recommendation of the Board of Directors

Our Board has approved Proposal 1 — an amendment to our Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock, with a corresponding increase in the total number of shares authorized — and has approved Proposal 2 — an amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split of the issued and outstanding common stock at a ratio that is not less than 2:1 nor greater than 50:1, with the final ratio selected by our Board in its discretion. **Our Board recommends that you vote “FOR” Proposal 1 and Proposal 2.**

If you have any questions about voting your shares, please call Investor Relations at (858) 552-0866, ext 235.

QUESTIONS AND ANSWERS ABOUT THIS PROXY STATEMENT

What am I voting on?

You are voting on an amendment to our Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock, with a corresponding increase in the total number of shares authorized, and an amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split of the issued and outstanding common stock at a ratio that is not less than 2:1 nor greater than 50:1, with the final ratio to be selected by our Board in its discretion.

Who is soliciting my proxy to vote on the proposals described in this proxy statement?

Our Board is requesting your proxy to vote on each of the proposals described in this proxy statement.

How does the Board of Directors recommend that I vote?

Our Board recommends that you vote "FOR" each of the proposals described in this proxy statement.

Why does the Company need to hold this meeting?

We intend to file a registration statement 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 are in the process of determining the number of shares we anticipate issuing in the 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 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. The Company is currently authorized to issue 200,000,000 shares of common stock, of which 108,288,771 shares were issued and outstanding as of June 30, 2009. In addition, as of June 30, 2009, but assuming the issuance of 1,361 shares of our 5% Series B Convertible Preferred Stock in connection with the financing transaction that we announced on June 29, 2009 and that such shares are issued and outstanding as of June 30, 2009, 22,941,377 shares of our common stock are reserved for issuance upon exercise of outstanding options and warrants, 9,504,189 shares of our common stock are reserved for issuance upon conversion of outstanding preferred stock, 3,150,000 shares of our common stock are reserved for issuance upon vesting of outstanding restricted stock units, 475,209 shares of our common stock are reserved in connection with the issuance of warrants to the placement agent for the registered direct financing we announced on June 29, 2009 and 13,430,188 shares of our common stock are reserved for issuance under our Stock Plans (as defined below). As result, the Company currently has limited shares of common stock available for issuance. We are holding this meeting to increase the total number of authorized shares available for issuance to conduct the Offering and for other corporate purposes.

On June 1, 2009, we received notice from the staff of the NYSE Amex LLC (the "Exchange") that, based on their review of our Form 10-Q for the period ended March 31, 2009, we are not in compliance with certain of the Exchange's continued listing standards as set forth in Part 10 of the Exchange's Company Guide (the "Company Guide"). Specifically, the Exchange noted that the Company is not in compliance with Section 1003(a)(ii) of the Company Guide because it reported stockholders' equity of less than \$4,000,000 and losses from continuing operations and net losses in three of its four most recent fiscal years, or with Section 1003(a)(iii) of the Company Guide because it reported stockholders' equity of less than \$6,000,000 and losses from continuing operations and net losses in its five most recent fiscal years.

In addition, the Exchange staff notified us, in accordance with Section 1003(f)(v) of the Company Guide, that it deems it appropriate for us to effect a reverse stock split of our common stock to address its low selling price per share, and that if a reverse stock split is not completed within a reasonable amount of time after June 1, 2009, the Exchange may consider suspending dealings in, or removing from the list, our common stock. While the Exchange does not provide bright line minimum share price standards for continued listing, we believe that a price less than \$1.00 per share for a substantial period of time will be investigated. From October 1, 2007 through July 23, 2009, the closing price of a share of our common stock has been less than \$1.00.

If we are unable to comply with the Exchange's continued listing standards, our common stock may be suspended from trading on and/or delisted from the Exchange. The delisting of our common stock from the Exchange is likely to reduce the trading volume and liquidity in our common stock and may lead to further decreases in the trading price of our common stock. The delisting of our common stock may also materially impair our stockholders' ability to buy and sell shares of our common stock. In addition, the delisting of our common stock could significantly impair our ability to raise capital, which is critical to the continuation of our business.

Our Board has determined that an amendment to our Amended and Restated Certificate of Incorporation to increase the authorized number of our shares of common stock and an amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split are necessary for, among other things, the continued listing of our common stock on the Exchange. The increase in the number of authorized shares of common stock, along with the corresponding increase in the total number of shares authorized, increases the likelihood that the Company will have enough shares to conduct the Offering, which is expected to increase our stockholders' equity. The reverse stock split is intended to increase the price per share of the Company's common stock to levels acceptable to the Exchange. Pursuant to the law of our state of incorporation, Delaware, our Board must adopt any amendment to our Amended and Restated Certificate of Incorporation, declare its advisability and submit the amendment to stockholders for approval. Accordingly, our Board is requesting your proxy to vote "FOR" each of the proposals described in this proxy statement.

What vote is required to approve the proposed amendments to the Company's Amended and Restated Certificate of Incorporation?

The proposed amendments require the affirmative vote of the holders of a majority of the Company's outstanding shares of common stock.

What effect will the reverse stock split have on the Company's issued and outstanding shares of common stock?

If the reverse stock split is approved by our stockholders, we will exchange one new share for a number of outstanding shares to be determined when our Board, in its discretion, selects the final reverse split ratio within the range of not less than 2:1 nor greater than 50:1. When the reverse stock split becomes effective, the number of the Company's outstanding shares will be reduced proportionately to the selected reverse split ratio, but the value of each share should be proportionately increased by that same ratio. We will not issue any fractional shares. Stockholders who would otherwise hold fractional shares as a result of the reverse stock split will be entitled to receive cash (without interest or deduction) in lieu of such fractional shares from our transfer agent, upon receipt by our transfer agent of a properly completed and duly executed transmittal letter and, where shares are held in certificated form, the surrender of all old stock certificate(s) ("Old Certificate(s)"), in an amount equal to the proceeds attributable to the sale of such fractional shares following the aggregation and sale by our transfer agent of all fractional shares otherwise issuable. The reverse stock split will not directly and by itself impact the market value of our company as a whole, although the market value of our common stock may move up or down once the reverse stock split is effective.

What effect will the proposals have on the Company's authorized shares of common stock?

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.

If the reverse stock split is approved, when will the Board take action?

If the reverse stock split is approved, the Board can take action at any during the twelve months following stockholder approval of the reverse stock split. The Board must use one of the approved ratios or it can choose not to do a reverse stock split at all.

How will the reverse stock split impact the Company's Stock Plans?

Our Board has approved proportionate adjustments to the number of shares outstanding and available for issuance under the Stock Plans and to the exercise price, grant price or purchase price relating to any award under the Stock Plans, using the same split ratio, if the reverse stock split is effected. Adjustments made by our Board may include any correlative modification of terms as are necessary or appropriate to ensure awards are not substantially diminished or enlarged as a result of the reverse stock split, if the reverse stock split is effected.

What are the mechanics of the reverse stock split?

Assuming the reverse stock split is approved by our stockholders, this is how it will work:

- If your shares are held in "street name" — that is, through an account at a brokerage firm, bank, dealer, or other similar organization — the number of shares you hold will automatically be adjusted to reflect the reverse stock split.
- If your shares are registered directly in your name with our transfer agent and your shares are held in book-entry form (i.e. your shares are not represented by a physical stock certificate), the number of shares you hold will automatically be adjusted to reflect the reverse stock split. You will be sent a transmittal letter by our transfer agent. You will need to return to our transfer agent a properly completed and duly executed transmittal letter in order to receive any cash payment in lieu of fractional shares or any other distributions, if any, that may be declared and payable to holders of record.
- If your shares are registered directly in your name with our transfer agent and your shares are held in certificated form (i.e. your shares are represented by one or more physical stock certificates), you will receive a transmittal letter asking you to surrender your Old Certificate(s) representing pre-split shares in exchange for a new certificate ("New Certificate") representing post-split shares. You will need to return to our transfer agent a properly completed and duly executed transmittal letter, together with your Old Certificate(s), in order to receive a New Certificate and any cash payment in lieu of fractional shares or any other distributions, if any, that may be declared and payable to holders of record following the reverse stock split.

Whether your shares are held in street name or directly, we will not issue fractional shares of common stock to you. Stockholders who would otherwise hold fractional shares as a result of the reverse stock split will be entitled to receive cash (without interest or deduction) in lieu of such fractional shares from our transfer agent, upon receipt by our transfer agent of a properly completed and duly executed transmittal letter and, where shares are held in certificated form, the surrender of all Old Certificate(s), in an amount equal to the proceeds attributable to the sale of such fractional shares following the aggregation and sale by our transfer agent of all fractional shares otherwise issuable.

Any cash due to you in exchange for fractional shares will be paid to you as follows:

- If your shares are held in street name, payment for the fractional shares will be deposited directly into your account with the organization holding your shares.
- If your shares are registered directly in your name with our transfer agent, whether you hold your shares in certificated or uncertificated form, payment for the fractional shares will be made by check, sent to you directly from our transfer agent upon receipt of your properly completed and duly executed transmittal letter and, where your shares are held in certificated form, the surrender of your Old Certificate(s).

After the reverse stock split, I will have an “odd lot” of fewer than 100 shares. Will I be able to sell the “odd lot”?

The reverse stock split may result in some stockholders owning “odd lots” of fewer than 100 shares on a post-split basis. You will be able to sell the odd lots, but odd lot sales may result in higher transaction costs per share than “round lot” sales, which are sales of even multiples of 100 shares.

Are there any dissenter’s rights or appraisal rights?

Pursuant to applicable Delaware law, there are no dissenter’s or appraisal rights relating to Proposal 1 or Proposal 2.

If my shares are held in “street name” by my broker, will my broker vote my shares for me?

If your shares are held in the name of a bank or broker or other nominee, you will receive separate instructions from your bank, broker or other nominee describing how to vote your shares. The availability of telephonic or Internet voting will depend on the bank’s or broker’s voting process. Please check with your bank or broker and follow the voting procedures your bank or broker provides.

You should instruct your bank, broker or other nominee how to vote your shares. If they do not receive voting instructions from you regarding these proposals, applicable rules grant them discretionary authority to vote your shares.

May I change my vote after I have mailed my signed proxy card?

Yes. You may change your vote at any time before your proxy is voted at the Special Meeting. You can do this in several ways. You can send a written notice stating that you want to revoke your proxy, or you can complete and submit a new proxy card bearing a later date. If you choose either of these methods, you must submit your notice of revocation or your new proxy card to the Company’s Secretary at Adventrx Pharmaceuticals, Inc., Attention: Secretary, 6725 Mesa Ridge Road, Suite 100, San Diego, CA 92121.

You can also attend the Special Meeting and vote in person. Simply attending the Special Meeting, however, will not revoke your proxy. To revoke your earlier proxy, you must vote at the Special Meeting.

If you have instructed a broker to vote your shares, the preceding instructions do not apply, and you must follow the voting procedures received from your broker to change your vote.

If I want to attend the Special Meeting, what do I do?

You should come to the offices of DLA Piper LLP (US), 4365 Executive Drive, Suite 1100, San Diego, California 92121, at 9:00 a.m. local time, on August 25, 2009. Stockholders of record as of the record date for the Special Meeting (July 17, 2009) can vote in person at the Special Meeting. If your shares are held in street name, then you are not the stockholder of record and you must ask your bank, broker or other nominee holder how you can vote in person at the Special Meeting.

Who can help answer my questions?

If you have any questions or need assistance in voting your shares or have other questions regarding the Special Meeting, you may contact:

Adventrx Pharmaceuticals, Inc.
6725 Mesa Ridge Road, Suite 100
San Diego, CA 92121
Attention: Investor Relations
Telephone: (858) 552-0866, ext 235

PROPOSAL 1

APPROVAL OF AN AMENDMENT TO OUR AMENDED AND RESTATED CERTIFICATE OF INCORPORATION TO INCREASE THE NUMBER OF AUTHORIZED SHARES OF COMMON STOCK, WITH A CORRESPONDING INCREASE IN THE TOTAL NUMBER OF SHARES AUTHORIZED

Our Board has adopted and is submitting for stockholder approval a proposal to amend our Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock from 200,000,000 shares to 500,000,000 shares, with a corresponding increase in the total number of shares which the Company is authorized to issue from 201,000,000 to 501,000,000. Pursuant to the law of our state of incorporation, Delaware, our Board must adopt any amendment to our Amended and Restated Certificate of Incorporation, declare its advisability and submit the amendment to stockholders for their approval. The affirmative vote of the holders of a majority of the Company's outstanding shares of common stock is required to approve the amendment.

This proposed increase in the number of authorized shares of common stock, and the corresponding increase in the total number of shares authorized, will become effective upon the Company's filing the Proposal 1 Certificate of Amendment with the Delaware Secretary of State. The Company currently plans to file the Proposal 1 Certificate of Amendment as soon as reasonably practicable after receiving approval from its stockholders at the Special Meeting. A copy of the form of the Proposal 1 Certificate of Amendment is attached to this Proxy Statement as *Annex A*, and the following discussion is qualified in its entirety by the full text of the Proposal 1 Certificate of Amendment.

If this Proposal 1 is approved, Section A of Article IV of the Amended and Restated Certificate of Incorporation will be amended to reflect an increase of 300,000,000 in the number of authorized shares of common stock and a corresponding increase of 300,000,000 in the total number of shares authorized. The proposed amendment will not change the total number of authorized shares of the Company's preferred stock. The proposed amendment is set forth in its entirety below:

“(A) *Classes of Stock.* The Corporation is authorized to issue two classes of stock to be designated, respectively, “Common Stock” and “Preferred Stock.” The total number of shares which the Corporation is authorized to issue is Five Hundred One Million shares, each with a par value of \$0.001 per share. Five Hundred Million (500,000,000) shares shall be Common Stock, and One Million (1,000,000) shares shall be Preferred Stock.”

Our Board reserves the right pursuant to Section 242(c) of the Delaware General Corporation Law, notwithstanding stockholder approval and without further action by the stockholders, to determine not to proceed with the proposed increase in the number of authorized shares of common stock, or the corresponding proposed increase in the total number of shares authorized, if, at any time before the filing of the Proposal 1 Certificate of Amendment with the Delaware Secretary of State, our Board determines that the increases are no longer in the best interests of the Company and its stockholders.

Purpose of the Proposed Amendment

The Company is currently authorized to issue a total of 200,000,000 shares of common stock. As of June 30, 2009, 108,288,771 shares of common stock were issued and outstanding. In addition, as of June 30, 2009, but assuming the issuance of 1,361 shares of our 5% Series B Convertible Preferred Stock in connection with the financing transaction that we announced on June 29, 2009 and that such shares are issued and outstanding as of June 30, 2009, 22,941,377 shares of our common stock are reserved for issuance upon exercise of outstanding options and warrants, 9,504,189 shares of our common stock are reserved for issuance upon conversion of outstanding preferred stock, 3,150,000 shares of our common stock are reserved for issuance upon vesting of outstanding restricted stock units, 475,209 shares of our common stock are reserved in connection with the issuance of warrants to the placement agent for the registered direct financing we announced on June 29, 2009 and 13,430,188 shares of our common stock are reserved for issuance under our Stock Plans. As a result, the Company does not believe it has sufficient shares of common stock available for the Offering or for other corporate purposes.

[Table of Contents](#)

On June 1, 2009, we received notice from the staff of the Exchange that, based on their review of our Form 10-Q for the period ended March 31, 2009, we are not in compliance with certain of the Exchange's continued listing standards as set forth in Part 10 of the Company Guide. Specifically, the Exchange noted that the Company is not in compliance with Section 1003(a)(ii) of the Company Guide because it reported stockholders' equity of less than \$4,000,000 and losses from continuing operations and net losses in three of its four most recent fiscal years, or with Section 1003(a)(iii) of the Company Guide because it reported stockholders' equity of less than \$6,000,000 and losses from continuing operations and net losses in its five most recent fiscal years.

The purpose of this proposal is to provide us with a sufficient number of shares of common stock which are authorized for (i) future issuances pursuant to the Offering; and (ii) other corporate purposes recommended and authorized by our Board.

We are seeking to complete the Offering in order to raise capital for development and expansion of the Company's business. The Company has determined that it must raise additional capital to adequately fund its business and to regain compliance with the continued listing standards of the Exchange by increasing its stockholders' equity.

Effect of the Proposed Amendment

The increase in the number of authorized shares of common stock, and the corresponding increase in the total number of shares authorized, will not have an immediate effect on the rights of existing stockholders. However, if this proposal is not approved, the Company likely will not have the ability to issue sufficient shares to support the corporate purposes described above; primarily, to have enough shares to complete the Offering.

The shares of common stock authorized by this Proposal 1 will have the same rights, preferences and privileges of our previously authorized shares of common stock. Current holders of our common stock do not have preemptive rights, which means that they do not have a right to purchase a proportionate share of any new issuances of common stock in order to maintain their proportionate ownership of the Company. Therefore, the issuance of any additional shares of common stock will have a dilutive effect on the equity and voting power of existing holders of common stock. It may also adversely affect the market price of common stock.

Anti-Takeover Effects

Our Board is not recommending this Proposal 1 with an intent to use the ability to issue additional common stock to discourage tender offers or takeover attempts. However, the availability of authorized common stock for issuance could render more difficult or discourage a merger, tender offer, proxy contest or other attempt to obtain control of the Company. The proposed amendment is not in response to any effort on the part of any party to accumulate common stock or to acquire control of the Company by means of merger, tender offer, proxy contest or otherwise, or to change management.

Approval Required

The affirmative vote of the holders of a majority of the Company's outstanding shares of common stock is required to approve Proposal 1.

Recommendation of the Board of Directors

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE "FOR" PROPOSAL 1.

PROPOSAL 2

APPROVAL OF AN AMENDMENT TO OUR AMENDED AND RESTATED CERTIFICATE OF INCORPORATION TO EFFECT A REVERSE STOCK SPLIT OF OUR COMMON STOCK

Our Board has adopted and is submitting for stockholder approval an amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split at a ratio that is not less than 2:1 nor greater than 50:1, with the final ratio to be selected by our Board in its discretion following stockholder approval. Pursuant to the law of our state of incorporation, Delaware, our Board must adopt any amendment to our Amended and Restated Certificate of Incorporation, declare its advisability and submit the amendment to stockholders for their approval. The affirmative vote of the holders of a majority of the Company's outstanding shares of common stock is required to approve the reverse stock split.

The form of the proposed amendment to our Amended and Restated Certificate of Incorporation to effect the reverse stock split is attached to this Proxy Statement as *Annex B*. The amendment will effect a reverse stock split of our common stock at a ratio that is not less than 2:1 nor greater than 50:1, with the final ratio to be selected by our Board in its discretion following stockholder approval. Our Board, in its discretion, may elect to effect any one (but not more than one) of the reverse split ratios in that range upon receipt of stockholder approval, or none of them if our Board determines in its discretion not to proceed with the reverse stock split. We believe that the availability of alternative reverse split ratios will provide the Company with the flexibility to implement the reverse stock split in a manner designed to maximize the anticipated benefits for us and our stockholders. In determining which reverse stock split ratio to implement, if any, following the receipt of stockholder approval, our Board may consider, among other things, factors such as:

- the historical trading price and trading volume of our common stock;
- the then prevailing trading price and trading volume of our common stock and the anticipated impact of the reverse stock split on the trading market for our common stock;
- our ability to continue our listing on the Exchange;
- which of the alternative reverse split ratios would result in the greatest overall reduction in our administrative costs; and
- prevailing general market and economic conditions.

To avoid the existence of fractional shares of our common stock, stockholders who would otherwise hold fractional shares as a result of the reverse stock split will be entitled to receive cash (without interest or deduction) in lieu of such fractional shares from our transfer agent, upon receipt by our transfer agent of a properly completed and duly executed transmittal letter and, where shares are held in certificated form, the surrender of all Old Certificate(s), in an amount equal to the proceeds attributable to the sale of such fractional shares following the aggregation and sale by our transfer agent of all fractional shares otherwise issuable.

As of June 30, 2009, we had 108,288,771 shares of common stock issued and outstanding. Based on the number of shares of common stock currently issued and outstanding, immediately following the completion of the reverse stock split, and, for illustrative purposes only, assuming a 10:1 reverse stock split, we would have approximately 10,828,877 shares of common stock issued and outstanding (without giving effect to the treatment of fractional shares). The actual number of shares outstanding after giving effect to the reverse stock split will depend on the reverse split ratio that is ultimately selected by our Board. We do not expect the reverse stock split itself to have any economic effect on our stockholders, debt holders or holders of options or restricted stock, except to the extent the reverse stock split will result in fractional shares as discussed below.

Purpose of the Reverse Stock Split

Our Board authorized the reverse split of our common stock with the primary intent of increasing the price of our common stock in order to continue to meet the Exchange's price criteria for continued listing on that exchange. Our common stock is publicly traded and listed on the Exchange under the symbol "ANX." Our Board believes that, in addition to increasing the price of our common stock, the reverse stock split would also reduce certain of our

costs, such as Exchange listing fees, and make our common stock more attractive to a broader range of institutional and other investors. Accordingly, for these and other reasons discussed below, we believe that effecting the reverse stock split is in the Company's and our stockholders' best interests.

On June 1, 2009, the Exchange staff notified us, in accordance with Section 1003(f)(v) of the Company Guide, that it deems it appropriate for us to effect a reverse stock split of our common stock to address its low selling price per share, and that if a reverse stock split is not completed within a reasonable amount of time after June 1, 2009, the Exchange may consider suspending dealings in, or removing from the list, our common stock. While the Exchange does not provide bright line minimum share price standards for continued listing, we believe that a price less than \$1.00 per share for a substantial period of time will be investigated. From October 1, 2007 through July 23, 2009, the closing price of a share of our common stock has been less than \$1.00.

If we are unable to comply with the Exchange's continued listing standards, including its minimum trading price requirements, our common stock may be suspended from trading on and/or delisted from the Exchange. The delisting of our common stock from the Exchange is likely to reduce the trading volume and liquidity in our common stock and may lead to further decreases in the trading price of our common stock. The delisting of our common stock may also materially impair our stockholders' ability to buy and sell shares of our common stock. In addition, the delisting of our common stock could significantly impair our ability to raise capital, which is critical to the continuation of our business. Our Board has determined that an amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split with the intent of raising the price per share of the Company's common stock is necessary in connection with the continued listing of our common stock on the Exchange, and is in the best interests of our stockholders.

In addition to initially creating a higher price per share, we also believe that the reverse stock split will make our common stock more attractive to a broader range of institutional investors, professional investors and other members of the investing public, many of whom have internal policies and practices that either prohibit them from investing in low-priced stocks or tend to discourage individual brokers from recommending low-priced stocks to their customers. In addition, some of those policies and practices may function to make the processing of trades in low-priced stocks economically unattractive to brokers. Moreover, because brokers' commissions on low-priced stocks generally represent a higher percentage of the stock price than commissions on higher-priced stocks, the current average price per share of common stock can result in individual stockholders paying transaction costs representing a higher percentage of their total share value than would be the case if the share price were substantially higher.

Reducing the number of outstanding shares of our common stock through the reverse stock split is intended, absent other factors, to increase the per share market price of our common stock. However, other factors, such as our financial results, market conditions and the market perception of our business (including the market's perception of and reaction to a proposal for or the implementation of a reverse stock split) may adversely affect the market price of our common stock. As a result, there can be no assurance that the reverse stock split, if completed, will result in the intended benefits described above, that the market price of our common stock will increase following the reverse stock split or that the market price of our common stock will not decrease in the future.

Effects of the Reverse Stock Split General

If the reverse stock split is approved and implemented, the principal effect will be to proportionately decrease the number of outstanding shares of our common stock based on the reverse stock split ratio selected by our Board. Our common stock is currently registered under Section 12(b) of the Securities Exchange Act of 1934, or the Exchange Act, and we are subject to the periodic reporting and other requirements of the Exchange Act. The reverse stock split will not affect the registration of our common stock under the Exchange Act or the listing of our common stock on the Exchange. Following the reverse stock split, our common stock will continue to be listed on the Exchange under the symbol "ANX," although it will be considered a new listing with a new CUSIP number.

Proportionate voting rights and other rights of the holders of our common stock will not be affected by the reverse stock split, other than as a result of the treatment of fractional shares as described below. For example, a

holder of 2% of the voting power of the outstanding shares of our common stock immediately prior to the effectiveness of the reverse stock split will generally continue to hold 2% of the voting power of the outstanding shares of our common stock after the reverse stock split. The number of stockholders of record will not be affected by the reverse stock split (except to the extent any are cashed out as a result of holding fractional shares). If approved and implemented, the reverse stock split may result in some stockholders owning "odd lots" of less than 100 shares of our common stock. Odd lot shares may be more difficult to sell, and brokerage commissions and other costs of transactions in odd lots are generally somewhat higher than the costs of transactions in "round lots" of even multiples of 100 shares. Our Board believes, however, that these potential adverse effects are outweighed by the potential benefits of the reverse stock split.

Effectiveness of Reverse Stock Split

The reverse stock split, if approved by our stockholders, would become effective upon the filing and effectiveness (the "Effective Time") of the Proposal 2 Certificate of Amendment with the Delaware Secretary of State. Our Board must use one of the approved ratios or it can choose not to do a reverse stock split at all. However, the exact timing of the filing of the Proposal 2 Certificate of Amendment will be determined by our Board based on its evaluation as to when such action will be the most advantageous to our Company and our stockholders, and our Board will have discretion, for up to twelve months following stockholder approval, as to when to file the Proposal 2 Certificate of Amendment with the Delaware Secretary of State. In addition, our Board reserves the right, notwithstanding stockholder approval and without further action by the stockholders, to elect not to proceed with the reverse stock split if, at any time prior to filing the Proposal 2 Certificate of Amendment, our Board, in its sole discretion, determines that it is no longer in our Company's best interests and the best interests of our stockholders to proceed with the reverse stock split.

Effect on the Company's Stock Plans

As of June 30, 2009, we had approximately 6,262,468 shares subject to outstanding awards under our 2008 Omnibus Incentive Plan, our 2005 Employee Stock Purchase Plan and our 2005 Equity Incentive Plan (collectively, the "Stock Plans"). We have adopted but not implemented the 2005 Equity Incentive Plan and no shares have been sold or issued under the 2005 Equity Incentive Plan. Under our Stock Plans, our Board or the Compensation Committee of our Board has sole discretion to determine the appropriate adjustment to the awards granted under our Stock Plans in the event of a stock split. Should the reverse stock split be effected, our Board has approved proportionate adjustments to the number of shares outstanding and available for issuance under our Stock Plans and proportionate adjustments to the exercise price, grant price or purchase price and other appropriate terms relating to any award under the Stock Plans. Our Board or the Compensation Committee of our Board will determine the treatment of fractional shares subject to stock options and unvested restricted stock under the Stock Plans.

Accordingly, if the reverse stock split is approved by our stockholders, upon the filing of the Proposal 2 Certificate of Amendment with the Delaware Secretary of State, the number of all outstanding equity awards, the number of shares available for issuance and the exercise price, grant price or purchase price and other appropriate terms relating to any award under the Stock Plans will be proportionately adjusted using the split ratio selected by our Board (subject to the treatment of fractional shares to be determined by our Board or the Compensation Committee of our Board). For example, if a 10:1 reverse stock split is effected, the 13,430,188 shares that remain available for issuance under the Stock Plans as of June 30, 2009, would be adjusted to 1,340,018 shares, subject to increase as and when awards made under the Stock Plans expire or are forfeited and are returned per the terms of the Stock Plans. In addition, the exercise price per share under each stock option would be increased by 10 times, such that upon an exercise, the aggregate exercise price payable by the optionee to the company would remain the same. For illustrative purposes only, an outstanding stock option for 3,000 shares of common stock, exercisable at \$1.00 per share, would be adjusted as a result of a 10:1 reverse split ratio into an option exercisable for 300 shares of common stock at an exercise price of \$10.00 per share. Our Board has also authorized the Company to effect any other changes necessary, desirable or appropriate to give effect to the reverse stock split, including any applicable technical, conforming changes to the Stock Plans.

Effect on Authorized but Unissued Shares of Common Stock and Preferred Stock

Currently, but excluding the effect of Proposal 1 (to increase the number of authorized shares of common stock, with a corresponding increase in the total number of shares authorized) and assuming the issuance of 1,361 shares of our 5% Series B Convertible Preferred Stock in connection with the financing transaction that we announced on June 29, 2009 and that such shares are issued and outstanding as of June 30, 2009, we are authorized to issue up to a total of 201,000,000 shares, comprising 200,000,000 shares of common stock, of which 108,288,771 shares were issued and outstanding as of June 30, 2009, and 1,000,000 shares of preferred stock, of which 1,361 shares were issued and outstanding as of June 30, 2009. We do not currently intend to reduce the number of authorized shares of our common stock or preferred stock as a result of the reverse stock split.

Effect on Par Value

The proposed amendment to our Amended and Restated Certificate of Incorporation will not affect the par value of our common stock, which will remain at \$0.001, or the par value of our preferred stock, which will remain at \$0.001.

Reduction In Stated Capital

As a result of the reverse stock split, upon the Effective Time, the stated capital on our balance sheet attributable to our common stock, which consists of the par value per share of our common stock multiplied by the aggregate number of shares of our common stock issued and outstanding, will be reduced in proportion to the size of the reverse stock split. Correspondingly, our additional paid-in capital account, which consists of the difference between our stated capital and the aggregate amount paid to us upon issuance of all currently outstanding shares of our common stock, shall be credited with the amount by which the stated capital is reduced. Our stockholders' equity, in the aggregate, will remain unchanged.

No Going Private Transaction

Notwithstanding the decrease in the number of outstanding shares following the proposed reverse stock split, our Board does not intend for this transaction to be the first step in a "going private transaction" within the meaning of Rule 13e-3 of the Exchange Act.

Book-Entry Shares

If the reverse stock split is effected, stockholders who hold uncertificated shares (i.e. shares held in book-entry form and not represented by a physical stock certificate), either as direct or beneficial owners, will have their holdings electronically adjusted by our transfer agent through a direct registration system (and, for beneficial owners, by their brokers or banks that hold in "street name" for their benefit, as the case may be) to give effect to the reverse stock split.

Stockholders who hold uncertificated shares as direct owners will be sent a transmittal letter by our transfer agent and will need to return a properly completed and duly executed transmittal letter in order to receive the electronic adjustment to give effect to the reverse stock split and in order to receive any cash payment in lieu of fractional shares or any other distributions, if any, that may be declared and payable to holders of record following the reverse stock split.

Exchange of Stock Certificates

If the reverse stock split is effected, stockholders holding certificated shares (i.e. shares represented by one or more physical stock certificates) will be required to exchange their Old Certificate(s) for New Certificate(s) representing the appropriate number of shares of our common stock resulting from the reverse stock split. Stockholders of record upon the Effective Time will be furnished the necessary materials and instructions for the surrender and exchange of their Old Certificate(s) at the appropriate time by our transfer agent. Stockholders will not have to pay any transfer fee or other fee in connection with such exchange. As soon as practicable after the Effective Time, our transfer agent will send a transmittal letter to each stockholder advising such holder of the

procedure for surrendering Old Certificate(s) in exchange for New Certificate(s). Pursuant to applicable rules of the Exchange, your Old Certificate(s) representing pre-split shares cannot be used for either transfers or deliveries made on the Exchange; thus, you must exchange your Old Certificate(s) for New Certificate(s) in order to effect transfers or deliveries of your shares on the Exchange.

YOU SHOULD NOT SEND YOUR OLD CERTIFICATES NOW. YOU SHOULD SEND THEM ONLY AFTER YOU RECEIVE THE LETTER OF TRANSMITTAL FROM OUR TRANSFER AGENT.

As soon as practicable after the surrender to the transfer agent of any Old Certificate(s), together with a properly completed and duly executed transmittal letter and any other documents the transfer agent may specify, the transfer agent will deliver to the person in whose name such Old Certificate(s) had been issued a New Certificate registered in the name of such person.

Until surrendered as contemplated herein, a stockholder's Old Certificate(s) shall be deemed at and after the Effective Time to represent the number of full shares of our common stock resulting from the reverse stock split. Until stockholders have returned their properly completed and duly executed transmittal letter and surrendered their Old Certificate(s) for exchange, stockholders will not be entitled to receive any other distributions, if any, that may be declared and payable to holders of record following the reverse stock split.

Any stockholder whose Old Certificate(s) have been lost, destroyed or stolen will be entitled to a New Certificate only after complying with the requirements that we and the transfer agent customarily apply in connection with lost, stolen or destroyed certificates.

No service charges, brokerage commissions or transfer taxes shall be payable by any holder of any Old Certificate, except that if any New Certificate is to be issued in a name other than that in which the Old Certificate(s) are registered, it will be a condition of such issuance that (1) the person requesting such issuance must pay to us any applicable transfer taxes or establish to our satisfaction that such taxes have been paid or are not payable, (2) the transfer complies with all applicable federal and state securities laws, and (3) the surrendered certificate is properly endorsed and otherwise in proper form for transfer.

Fractional Shares

We do not currently intend to issue fractional shares in connection with the reverse stock split. Therefore, we do not expect to issue certificates representing fractional shares. Stockholders who would otherwise hold fractional shares because the number of shares of common stock they hold before the reverse stock split is not evenly divisible by the split ratio ultimately selected by our Board will be entitled to receive cash (without interest or deduction) in lieu of such fractional shares from our transfer agent, upon receipt by our transfer agent of a properly completed and duly executed transmittal letter and, where shares are held in certificated form, the surrender of all Old Certificate(s), in an amount equal to the proceeds attributable to the sale of such fractional shares following the aggregation and sale by our transfer agent of all fractional shares otherwise issuable. The ownership of a fractional share interest will not give the holder any voting, dividend or other rights, except to receive the above-described cash payment. The Company will be responsible for any brokerage fees or commissions related to the transfer agent's selling in the open market shares that would otherwise be fractional shares.

Stockholders should be aware that, under the escheat laws of various jurisdictions, sums due for fractional interests that are not timely claimed after the Effective Time may be required to be paid to the designated agent for each such jurisdiction, unless correspondence has been received by us or our transfer agent concerning ownership of such funds within the time permitted in such jurisdiction. Thereafter, if applicable, stockholders otherwise entitled to receive such funds, but who do not receive them due to, for example, their failure to timely comply with our transfer agent's instructions, will have to seek to obtain such funds directly from the state to which they were paid.

No Appraisal Rights

Under the Delaware General Corporation Law, our stockholders are not entitled to dissenter's rights or appraisal rights with respect to the reverse stock split described in this Proposal 2, and we will not independently provide our stockholders with any such rights.

Certain Federal Income Tax Consequences of the Reverse Stock Split

The following discussion is a general summary of certain U.S. federal income tax consequences of the reverse stock split that may be relevant to (i) holders of our common stock that hold such stock as a capital asset for federal income tax purposes and (ii) to us. This summary is based upon the provisions of the Internal Revenue Code of 1986, as amended (the "Code"), Treasury regulations promulgated thereunder, administrative rulings and judicial decisions as of the date hereof, all of which may change, possibly with retroactive effect, resulting in U.S. federal income tax consequences that may differ from those discussed below. This discussion does not address all aspects of federal income taxation that may be relevant to such holders in light of their particular circumstances or to holders that may be subject to special tax rules, including, without limitation: (i) holders subject to the alternative minimum tax; (ii) banks, insurance companies, or other financial institutions; (iii) tax-exempt organizations; (iv) dealers in securities or commodities; (v) regulated investment companies or real estate investment trusts; (vi) partnerships (or other flow-through entities for U.S. federal income tax purposes and their partners or members); (vii) traders in securities that elect to use a mark-to-market method of accounting for their securities holdings; (viii) U.S. Holders (as defined below) whose "functional currency" is not the U.S. dollar; (ix) persons holding our common stock as a position in a hedging transaction, "straddle," "conversion transaction" or other risk reduction transaction; (x) persons who acquire shares of our common stock in connection with employment or other performance of services; or (xi) U.S. expatriates. In addition, this summary does not address the tax consequences arising under the laws of any foreign, state or local jurisdiction and U.S. federal tax consequences other than federal income taxation. If a partnership (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds shares of our common stock, the tax treatment of a holder that is a partner in the partnership generally will depend upon the status of the partner and the activities of the partnership.

We have not sought, and will not seek, an opinion of counsel or a ruling from the Internal Revenue Service ("IRS") regarding the U.S. federal income tax consequences of the reverse stock split and there can be no assurance the IRS will not challenge the statements and conclusions set forth below or that a court would not sustain any such challenge. EACH HOLDER OF COMMON STOCK SHOULD CONSULT SUCH HOLDER'S TAX ADVISOR WITH RESPECT TO THE PARTICULAR TAX CONSEQUENCES OF THE REVERSE STOCK SPLIT TO SUCH HOLDER.

For purposes of the discussion below, a "U.S. Holder" is a beneficial owner of shares of our common stock that for U.S. federal income tax purposes is: (1) an individual citizen or resident of the United States; (2) a corporation (including any entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state or political subdivision thereof; (3) an estate the income of which is subject to U.S. federal income taxation regardless of its source; or (4) a trust, the administration of which is subject to the primary supervision of a U.S. court and as to which one or more U.S. persons have the authority to control all substantial decisions of the trust, or that has a valid election in effect to be treated as a U.S. person. A "Non-U.S. Holder" is a beneficial owner (other than a partnership) of shares of our common stock who is not a U.S. Holder.

U.S. Holders

The reverse stock split should constitute a "recapitalization" for U.S. federal income tax purposes. As a result, a U.S. Holder generally should not recognize gain or loss upon the reverse stock split, except with respect to cash received in lieu of a fractional share of our common stock, as discussed below. A U.S. Holder's aggregate tax basis in the shares of our common stock received pursuant to the reverse stock split should equal the aggregate tax basis of the shares of our common stock surrendered (excluding any portion of such basis that is allocated to any fractional share of our common stock), and such U.S. Holder's holding period (i.e. acquired date) in the shares of our common stock received should include the holding period in the shares of our common stock surrendered. Treasury regulations promulgated under the Code provide detailed rules for allocating the tax basis and holding period of the shares of our common stock surrendered to the shares of our common stock received pursuant to the reverse stock split. Holders of shares of our common stock acquired on different dates and at different prices should consult their tax advisors regarding the allocation of the tax basis and holding period of such shares.

A U.S. Holder who receives cash in lieu of a fractional share of our common stock pursuant to the reverse stock split should recognize capital gain or loss in an amount equal to the difference between the amount of cash received and the U.S. Holder's tax basis in the shares of our common stock surrendered that is allocated to such fractional

share of our common stock. Such capital gain or loss should be long term capital gain or loss if the U.S. Holder's holding period for our common stock surrendered exceeded one year at the Effective Time.

Information Reporting and Backup Withholding. Information returns generally will be required to be filed with the IRS with respect to the receipt of cash in lieu of a fractional share of our common stock pursuant to the reverse stock split in the case of certain U.S. Holders. In addition, U.S. Holders may be subject to a backup withholding tax (at the current applicable rate of 28%) on the payment of such cash if they do not provide their taxpayer identification numbers in the manner required or otherwise fail to comply with applicable backup withholding tax rules. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be refunded or allowed as a credit against the U.S. Holder's federal income tax liability, if any, provided the required information is timely furnished to the IRS.

Non-U.S. Holders

Non-U.S. Holders generally should be subject to tax in the manner described above under "U.S. Holders," except that any capital gain realized by a Non-U.S. Holder as a result of receiving cash in lieu of a fractional share of our common stock generally should not be subject to U.S. federal income or withholding tax unless:

- the Non-U.S. Holder is an individual who holds our common stock as a capital asset, is present in the U.S. for 183 days or more during the taxable year of the reverse stock split and meets certain other conditions;
- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business in the U.S. (and, if certain income tax treaties apply, is attributable to a Non-U.S. Holder's permanent establishment in the U.S.); or
- we are or have been a "United States real property holding corporation" for U.S. federal income tax purposes at any time within the shorter of the five-year period ending on the Effective Time, or the period that the Non-U.S. Holder held the shares of our common stock. We do not believe that we have been, currently are, or will become, a United States real property holding corporation.

Individual Non-U.S. Holders who are subject to U.S. federal income tax because they are present in the United States for 183 days or more during the year of the reverse stock split will be taxed on their gain (including gain from the sale of shares of our common stock and net of applicable U.S. losses from sales or exchanges of other capital assets recognized during the year) at a flat rate of 30% or such lower rate as may be specified by an applicable income tax treaty. Other Non-U.S. Holders subject to U.S. federal income tax with respect to gain recognized as a result of receiving cash in lieu of a fractional share of common stock generally will be taxed on such gain in the same manner as if they were U.S. Holders and, in the case of foreign corporations, may be subject to an additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

Information Reporting and Backup Withholding. In general, backup withholding and information reporting will not apply to payment of cash in lieu of a fractional share of our common stock to a Non-U.S. Holder pursuant to the reverse stock split if the Non-U.S. Holder certifies under penalties of perjury that it is a Non-U.S. Holder and neither we nor the transfer agent has actual knowledge to the contrary. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be refunded or allowed as a credit against the Non-U.S. Holder's U.S. federal income tax liability, if any, provided that certain required information is timely furnished to the IRS. In certain circumstances the amount of cash paid to a Non-U.S. Holder in lieu of a fractional share of our common stock, the name and address of the beneficial owner and the amount, if any, of tax withheld may be reported to the IRS.

Approval Required

The affirmative vote of the holders of a majority of the Company's outstanding shares of common stock is required to approve Proposal 2.

Recommendation of the Board of Directors

THE BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE "FOR" PROPOSAL 2.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information regarding beneficial ownership of the Company’s common stock as of June 30, 2009 (the “Evaluation Date”), or an earlier date for information based on filings with the U.S. Securities and Exchange Commission, or the SEC, by (a) each person known to the Company to beneficially own more than 5% of the outstanding shares of the Company’s common stock, (b) each director of the Company, (c) each of our “named executive officers” (as such term is defined in Item 402(a)(3) of Regulation S-K under the Securities Exchange Act of 1934, as amended) and (d) all directors and executive officers of the Company as a group. The information in this table is based solely on statements in filings with the SEC or other reliable information. As of the Evaluation Date, there were 108,288,771 shares of the Company’s common stock outstanding.

Name and Address of Beneficial Owner(1)	Amount and Nature of Beneficial Ownership(2)	Percent of Class
Principal Stockholders		
Funds affiliated with Carl C. Icahn(3) c/o Icahn Associates Corp. 767 Fifth Avenue New York, NY 10153	8,648,648	7.7%
Directors and Named Executive Officers		
Mark N.K. Bagnall(4)	350,000	*
Alexander J. Denner(5)	8,798,648	7.8%
Michael M. Goldberg(6)	226,000	*
Jack Lief(7)	150,000	*
Mark J. Pykett(8)	208,000	*
Eric K. Rowinsky(9)	100,000	*
Brian M. Culley(10)	308,541	*
Patrick L. Keran(11)	147,291	*
Evan M. Levine(12)	4,395,000	4.1%
Greg Hanson	0	*
Joan M. Robbins(13)	156,500	*
All directors and executive officers as a group (9 persons)(14)	10,358,324	9.2%

* Less than 1%.

- (1) Unless otherwise indicated, the address of each of the listed persons is c/o ADVENTRX Pharmaceuticals, Inc., 6725 Mesa Ridge Road, Suite 100, San Diego, CA 92121.
- (2) Beneficial ownership of shares is determined in accordance with the rules of the SEC and generally includes any shares over which a person exercises sole or shared voting or investment power, or of which a person has the right to acquire ownership within 60 days after the Evaluation Date. Except as otherwise noted, each person or entity has sole voting and investment power with respect to the shares shown. Unless otherwise noted, none of the shares shown as beneficially owned on this table are subject to pledge.
- (3) Consists of (a) 864,865 shares of common stock held by High River Limited Partnership (“High River”); (b) 1,660,540 shares of common stock held by Icahn Partners LP (“Icahn Partners”); (c) 1,798,919 shares of common stock held by Icahn Partners Master Fund LP (“Icahn Master”); (d) 864,865 shares of common stock issuable upon exercise of warrants held by High River; (e) 1,660,540 shares of common stock issuable upon exercise of warrants held by Icahn Partners and (f) 1,798,919 shares of common stock issuable upon exercise of warrants held by Icahn Master. Based on the Company’s review of a Schedule 13D filed with the SEC on August 5, 2005 (the “Icahn 13D”) by High River, Hopper Investments, LLC (“Hopper”), Barberry Corp. (“Barberry”), Icahn Master, Icahn Offshore LP (“Icahn Offshore”), CCI Offshore Corp. (“CCI Offshore”), Icahn Partners, Icahn Onshore LP (“Icahn Onshore”), CCI Onshore Corp. (“CCI Onshore”) and Mr. Carl C. Icahn, the Company believes that (i) Barberry, Hopper and Mr. Icahn may be deemed to beneficially own (as

[Table of Contents](#)

that term is defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended) the shares (including warrant shares) held by High River; (ii) CCI Onshore, Icahn Onshore and Mr. Icahn may be deemed to beneficially own (as that term is defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended) the shares (including warrant shares) directly held by Icahn Partners; and (iii) CCI Offshore, Icahn Offshore and Mr. Icahn may be deemed to beneficially own (as that term is defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended) the shares (including warrant shares) directly held by Icahn Master because, in each of the foregoing cases, such referenced persons are in a position to directly or indirectly determine the investment and voting decisions of the holder referenced. Barbary, Hopper, CCI Onshore, Icahn Onshore, CCI Offshore, Icahn Offshore and Mr. Icahn each disclaim beneficial ownership of such shares they may be deemed the beneficial owner of for all other purposes.

- (4) Consists of 350,000 shares of common stock subject to options currently exercisable or exercisable within 60 days of the Evaluation Date.
- (5) Consists of (a) 150,000 shares of common stock subject to options currently exercisable or exercisable within 60 days of the Evaluation Date, (b) 864,865 shares of common stock held by High River, (c) 1,660,540 shares of common stock held by Icahn Partners; (d) 1,798,919 shares of common stock held by Icahn Master, (e) 864,865 shares of common stock issuable upon exercise of warrants held by High River, (f) 1,660,540 shares of common stock issuable upon exercise of warrants held by Icahn Partners and (g) 1,798,919 shares of common stock issuable upon exercise of warrants held by Icahn Master. Dr. Denner is a Managing Director of entities affiliated with Mr. Icahn, including Icahn Partners and Icahn Master. Dr. Denner disclaims beneficial ownership of the shares owned by High River, Icahn Partners and Icahn Master except to the extent of his pecuniary interest therein.
- (6) Includes 200,000 shares of common stock subject to options currently exercisable or exercisable within 60 days of the Evaluation Date.
- (7) Consists of 150,000 shares of common stock subject to an option currently exercisable or exercisable within 60 days of the Evaluation Date.
- (8) Consists of (a) 200,000 shares of common stock subject to options currently exercisable or exercisable within 60 days of the Evaluation Date and (b) 8,000 shares of common stock held by Dr. Pykett and his spouse, as joint tenants.
- (9) Consists of 100,000 shares of common stock subject to an option currently exercisable or exercisable within 60 days of the Evaluation Date.
- (10) Consists of 308,541 shares of common stock subject to an option currently exercisable or exercisable within 60 days of the Evaluation Date.
- (11) Consists of 147,291 shares of common stock subject to an option currently exercisable or exercisable within 60 days of the Evaluation Date.
- (12) Consists of (a) 4,320,000 shares of common stock held by Mark Capital LLC, (b) 60,000 shares of common stock held by Mr. Levine in an individual retirement account and (c) 15,000 shares of common stock held by Mr. Levine and his father, as joint tenants with right of survivorship. Mr. Levine is the managing member of Mark Capital LLC.
- (13) Consists of 146,500 shares of common stock held by Dr. Robbins' husband and 10,000 shares of common stock held by Dr. Robbins and her spouse, as joint tenants.
- (14) Includes 6,000,000 shares of common stock subject to options and warrants currently exercisable or exercisable within 60 days of the Evaluation Date. Includes shares deemed beneficially owned by Dr. Denner but as to which he disclaims beneficial ownership.

STOCKHOLDER PROPOSALS FOR 2010 ANNUAL MEETING

Whether or not Proposal 1 and/or Proposal 2 is approved, we intend to hold our regular annual meeting of stockholders in 2010. Stockholder proposals may be included in the Company's proxy materials for the 2010 Annual Meeting of Stockholders if they are provided to the Company on a timely basis and satisfy the other conditions set forth in applicable SEC rules. For a stockholder proposal to be included in the Company's proxy materials for the 2010 Annual Meeting of Stockholders, the proposal must be received at the Company's principal executive offices, addressed to the secretary of the Company, not later than December 30, 2009. Stockholder business that is not intended for inclusion in the Company's proxy materials may be brought before the annual meeting so long as the Company receives notice of the proposal as specified by the Company's bylaws, addressed to the secretary of the Company at the Company's principal executive offices, not earlier than February 2, 2010 nor later than the close of business on March 4, 2010. Stockholders may make nominations of persons for election to the Board at the 2010 Annual Meeting of Stockholders so long as the Company receives notice of the proposal as specified by the Company's bylaws, addressed to the secretary of the Company at the Company's principal executive offices, not earlier than February 2, 2010 nor later than the close of business on March 4, 2010. Stockholders are advised to review the Company's bylaws, which contain additional advance notice requirements, including requirements with respect to advance notice of stockholder proposals and director nominations. A copy of the Company's bylaws is available to stockholders from the secretary of the Company upon written request.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This proxy statement includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding our intent to solicit approval of Proposal 1 to increase the number of authorized shares of common stock, and the corresponding increase in the total number of shares authorized, and/or Proposal 2 to effect a reverse stock split, the timing of the Offering or a reverse stock split, the potential benefits of the Offering or a reverse stock split, including but not limited to improved stockholders' equity, increased investor interest, continued listing on the Exchange and the potential for a higher stock price and the timing and effects of any proposed amendment to our Amended and Restated Certificate of Incorporation. These forward-looking statements are identified by terms and phrases such as "anticipate," "believe," "intend," "estimate," "expect," "continue," "should," "could," "may," "plan," "project," "predict," "will" and similar expressions and include references to assumptions and relate to our future prospects, developments and business strategies. Such statements reflect the our current views and assumptions, and are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. These risks include, but are not limited to, risks relating to the volatility of our stock price and general market and economic conditions.

We undertake no obligation to update or revise the forward-looking statements included in this proxy statement, whether as a result of new information, future events or otherwise, after the date of this proxy statement. Our actual results, performance or achievements could differ materially from the results expressed in, or implied by, these forward-looking statements. Factors that could cause or contribute to such differences are discussed in the sections entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2008, which we filed with the SEC on March 27, 2009, and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2009, which we filed with the SEC on May 15, 2009. These documents are available on the SEC's website at www.sec.gov.

OTHER MATTERS

We have not received notice of any other matters to be proposed at the Special Meeting. Consequently, the only matters expected to be acted on at the Special Meeting are those described in this proxy statement, along with any necessary procedural matters related to the Special Meeting. As to procedural matters, or any other matters that are determined to be properly brought before the Special Meeting calling for a vote of the stockholders, it is the intention of the persons named in the accompanying proxy, unless otherwise directed in that proxy, to vote on those matters in accordance with their best judgment.

ANNEX A

**CERTIFICATE OF AMENDMENT
TO THE
AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
ADVENTRX PHARMACEUTICALS, INC.**

**Pursuant to Sections 228 and 242 of
the General Corporation Law of the
State of Delaware**

ADVENTRX PHARMACEUTICALS, INC., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "Corporation"), does hereby certify as follows:

FIRST: That the Board of Directors of the Corporation has determined that it is in the best interests of the Corporation and its stockholders to increase the number of authorized shares of common stock from 200,000,000 to 500,000,000 shares, with a corresponding increase in the total number of shares which the Corporation is authorized to issue from 201,000,000 to 501,000,000. To this end, the Board of Directors has duly adopted resolutions (i) authorizing the Corporation to execute and file with the Secretary of State of the State of Delaware an amendment of the Corporation's Amended and Restated Certificate of Incorporation to issue and to increase the authorized number of shares of common stock, with a corresponding increase in the total number of shares authorized; and (ii) declaring such amendment to be advisable for the Corporation and its stockholders.

SECOND: That the stockholders of the Corporation have authorized and approved the amendment in accordance with Section 216 of the Delaware General Corporation Law.

THIRD: That the amendment was duly adopted in accordance with the provisions of Section 242 of the Delaware General Corporation Law by the Board of Directors and stockholders of the Corporation.

FOURTH: That the capital of the Corporation shall not be reduced under or by reason of said amendment.

FIFTH: That upon the effectiveness of this Certificate of Amendment to the Amended and Restated Certificate of Incorporation, Section (A) of Article IV of the Amended and Restated Certificate of Incorporation shall be amended such that, as amended, said section shall read in its entirety as follows:

“(A) *Classes of Stock.* The Corporation is authorized to issue two classes of stock to be designated, respectively, “Common Stock” and “Preferred Stock.” The total number of shares which the Corporation is authorized to issue is Five Hundred One Million shares (501,000,000), each with a par value of \$0.001 per share. Five Hundred Million (500,000,000) shares shall be Common Stock, and One Million (1,000,000) shares shall be Preferred Stock.”

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to the Amended and Restated Certificate of Incorporation to be executed by Brian M. Culley, its Chief Business Officer and Senior Vice President, this th day of , 2009.

ADVENTRX PHARMACEUTICALS, INC.

By: _____
Brian M. Culley
Chief Business Officer and Senior Vice President

ANNEX B

**CERTIFICATE OF AMENDMENT
TO THE
AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
ADVENTRX PHARMACEUTICALS, INC.**

**Pursuant to Sections 228 and 242 of
the General Corporation Law of the
State of Delaware**

ADVENTRX PHARMACEUTICALS, INC., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "Corporation"), does hereby certify as follows:

FIRST: That the Board of Directors of the Corporation has determined that it is in the best interests of the Corporation and its stockholders to effect a reverse stock split of the Corporation's issued and outstanding Common Stock at a ratio that is not less than 2:1 nor greater than 50:1, with the final ratio to be selected by the Board of Directors in its discretion (the "Reverse Split"). To this end, the Board of Directors has duly adopted resolutions (i) authorizing the Corporation to execute and file with the Secretary of State of the State of Delaware an amendment of the Corporation's Amended and Restated Certificate of Incorporation to effect the Reverse Split; and (ii) declaring such amendment to be advisable for the Corporation and its stockholders.

SECOND: That the stockholders of the Corporation have authorized and approved the amendment in accordance with Section 216 of the Delaware General Corporation Law.

THIRD: That the amendment was duly adopted in accordance with the provisions of Section 242 of the Delaware General Corporation Law by the Board of Directors and stockholders of the Corporation.

FOURTH: That the capital of the Corporation shall not be reduced under or by reason of said amendment.

FIFTH: That upon the effectiveness of this Certificate of Amendment to the Amended and Restated Certificate of Incorporation, Section (A) of Article IV of the Amended and Restated Certificate of Incorporation shall be amended such that the following paragraph shall be added as the second paragraph of section (A) of Article IV immediately following the first paragraph of such section, as such section has been amended as of such date:

"Upon the close of trading on the NYSE Amex on the date the Corporation files this Certificate of Amendment with the Secretary of State of the State of Delaware (the "Effective Time"), each [] shares of the Common Stock, par value \$0.001 per share, of the Corporation issued and outstanding or held in treasury at the Effective Time shall be reclassified as and changed into one (1) share of Common Stock, par value \$0.001 per share, of the Corporation, without any action by the holders thereof. In lieu of any fractional shares to which a holder of shares of Common Stock of the Corporation would be otherwise entitled, the Corporation shall pay in cash, without interest, an amount equal to such fractional interest (after taking into account and aggregating all shares of Common Stock then held by such holder) multiplied by the closing price of the Common Stock as last reported on the NYSE Amex on the day of the Effective Time (determined on a post-split basis)."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to the Amended and Restated Certificate of Incorporation to be executed by Brian M. Culley., its Chief Business Officer and Senior Vice President, this th day of , 2009.

ADVENTRX PHARMACEUTICALS, INC.

By: _____
Brian M. Culley
Chief Business Officer and Senior Vice President

**ADVENTRX PHARMACEUTICALS, INC.
Proxy Solicited on behalf of the Board of Directors
for the Special Meeting of Stockholders
to be Held August 25, 2009**

The undersigned stockholder of ADVENTRX Pharmaceuticals, Inc. (the "Company") hereby appoints Brian M. Culley, with full power of substitution, as proxy of the undersigned to attend the Special Meeting of Stockholders of the Company to be held on August 25, 2009 at 9:00 a.m., Pacific time, and any adjournment thereof, hereby revoking any proxies heretofore given, and to vote all shares of common stock of the Company held or owned by the undersigned as directed on the reverse side of this proxy card, and in his discretion upon such other matters as may come before the meeting.

The Board recommends that you vote FOR the following proposals. The shares represented by this proxy, when properly executed, will be voted in the manner directed below. **IF NO CHOICE IS INDICATED, THE SHARES REPRESENTED BY THIS PROXY WILL BE VOTED FOR ALL OF THE FOLLOWING PROPOSALS.** This proxy may be revoked by the undersigned at any time, prior to the time it is voted by any of the means described in the accompanying Proxy Statement.

1. To approve a proposal to increase the number of shares of common stock from 200,000,000 shares to 500,000,000 shares, with a corresponding increase in the total number of shares which the Company is authorized to issue from 201,000,000 to 501,000,000, by filing a Certificate of Amendment to the Company's Amended and Restated Certificate of Incorporation.

_____ For _____ Against _____ Abstain

2. To approve a proposal to give the Board of Directors the authority, at its discretion, to effect a reverse split of the Company's common stock by filing a Certificate of Amendment to the Company's Amended and Restated Certificate of Incorporation.

_____ For _____ Against _____ Abstain

Please sign here. Date and sign exactly as name(s) appear(s) on this proxy. If signing for estates, trusts, corporations or other entities, full title or capacity should be stated. If shares are held jointly, each holder should sign.

Signature(s) of Stockholder(s):

Date: _____, _____

**PLEASE COMPLETE, DATE AND SIGN THIS PROXY
AND RETURN IT PROMPTLY IN THE ENCLOSED ENVELOPE.**