

ADVENTRX PHARMACEUTICALS, INC.

SUPPLEMENT TO PROSPECTUS DATED SEPTEMBER 8, 2005

This Supplement, dated May 8, 2007, supplements certain information contained in our prospectus dated September 8, 2005 (the "Prospectus"). This supplement is not complete without, and may not be delivered or utilized except in connection with, the Prospectus, including any amendments or supplements thereto.

The information contained in the table under the caption "Selling Security Holders" beginning on page 10 of the Prospectus is hereby supplemented by: (i) adding to the table the selling security holders set forth below under Schedule 1, and (ii) amending and restating the holdings of the selling security holders set forth below under Schedule 2.

SCHEDULE 1

Name	Shares Owned Before Offering(1)	Percent Owned Before Offering(2)	Shares Being Offered	Shares Owned Upon Completion Of Offering	Percent Owned After Offering(2)
Vicis Capital Master Fund	1,031,351(29)	1.15%†	910,151	121,200	*†
Matthew Balk	3,690,509(30)	4.1%†	250,000	3,440,509	3.8%†
Jason Adelman	866,246(31)	1.0%†	250,000	616,246	*†

(29) Consists of 1,031,351 shares of common stock issuable upon exercise of warrants held by this entity, 910,151 of which will be offered.

(30) Includes 384,447 shares of common stock issuable upon exercise of warrants held by this person, 250,000 of which will be offered.

(31) Includes 421,946 shares of common stock issuable upon exercise of warrants held by this person, 250,000 of which will be offered.

† The percentage ownership of common stock is based on 89,706,739 shares of our common stock outstanding as of April 30, 2007. Options and warrants to purchase our common stock that are presently exercisable or exercisable within 60 days of April 30, 2007, even if such options or warrants may otherwise be subject to restriction on exercise, are included in the total number of shares beneficially owned for the selling security holder holding those options or warrants and are considered outstanding for the purpose of calculating percentage ownership of that particular selling security holder.

SCHEDULE 2

Name	Shares Owned Before Offering(1)	Percent Owned Before Offering(2)	Shares Being Offered	Shares Owned Upon Completion Of Offering	Percent Owned After Offering(2)
North Sound Legacy Institutional Fund LLC	—	—	—	—	—
North Sound Legacy International Ltd.	—	—	—	—	—

Information concerning the selling security holders is based upon information provided to us by the security holders. This information may change from time to time and any changed information will be set forth in future prospectus supplements, if and when necessary. Additionally, the selling security holders identified above and in the Prospectus may have sold, transferred or otherwise disposed of all or a portion of their shares of our common stock since the date on which they last provided us with information about their holdings.