

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to

Section 13 or 15(d) of

THE SECURITIES EXCHANGE ACT OF 1934

Date of Report (Date of Earliest Event Reported): December 4, 2001

STEMCELLS, INC.
(Exact name of registrant as specified in its charter)

DELAWARE

0-19871

94-3078125

(State or other jurisdiction
of incorporation)

(Commission File Number)

(I.R.S. Employer
Identification Number)

2155 PORTER DRIVE
PALO ALTO, CALIFORNIA 94304

(Address, of principal executive offices, including zip code)

(650) 475-3100

(Registrant's Telephone number including area code)

Item 5. OTHER EVENTS

On December 4, 2001, the Company entered into an agreement with Millennium Partners, L.P. to cancel the adjustable warrants issued in July 2000 and June 2001 to Millennium. In connection with the cancellation, Millennium exercised the warrants on a cashless basis for an aggregate of 176,101 shares of the Company's common stock. The Company no longer has any adjustable warrants outstanding.

Also on December 4, 2001, the Company issued 5,000 shares of a new series of 3% cumulative convertible preferred stock and a warrant to purchase 350,877 shares of common stock to a wholly owned subsidiary of Millennium for an aggregate purchase price of \$5,000,000.

SIGNATURES

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

STEMCELLS, INC.

By: /s/ George Koshy

George Koshy
Controller and Acting Chief Financial Officer

Date: December 7, 2001

EXHIBIT INDEX

- 4.1 Certificate of Designations of the Powers, Preferences and Relative, Participating, Optional and Other Special Rights of Preferred Stock and Qualifications, Limitations and Restrictions Thereof of 3% Cumulative Convertible Preferred Stock for StemCells, Inc.
- 4.2 Warrant issued on December 4, 2001 by StemCells, Inc. to Riverview Group, L.L.C. for purchase of common stock.
- 10.1 Subscription Agreement dated as of December 4, 2001 between StemCells, Inc. and Riverview Group, L.L.C.
- 10.2 Registration Rights Agreement dated as of December 4, 2001 between StemCells, Inc. and Riverview Group, L.L.C.
- 10.3 Agreement dated as December 4, 2001 between StemCells, Inc. and Millennium Partners, L.P.
- 10.4 Agreement dated as December 4, 2001 among StemCells, Inc., Millennium Partners, L.P. and Riverview Group, L.L.C.
- 99.1 Press release dated as of December 6, 2001

CERTIFICATE OF DESIGNATIONS OF THE POWERS, PREFERENCES AND RELATIVE,
PARTICIPATING, OPTIONAL AND OTHER SPECIAL RIGHTS OF PREFERRED STOCK AND
QUALIFICATIONS, LIMITATIONS AND RESTRICTIONS THEREOF

OF

3% CUMULATIVE CONVERTIBLE PREFERRED STOCK

FOR

STEMCELLS, INC.

STEMCELLS, INC., a Delaware corporation (the "CORPORATION"), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors duly adopted the following resolutions, which resolutions remain in full force and effect as of the date hereof:

RESOLVED, that, pursuant to Article Fourth of the Certificate of Incorporation of the Corporation, the Board of Directors hereby authorizes the issuance of, and fixes the designation and preferences and relative, participating, optional and other special rights, and qualifications, limitations and restrictions, of a series of Preferred Stock consisting of 5,000 shares, par value \$.01, to be designated "3% Cumulative Convertible Preferred Stock" (the "PREFERRED SHARES"); and

RESOLVED, that each of the Preferred Shares shall rank equally in all respects and shall be subject to the following terms and provisions.

1. DESIGNATION. There is hereby created out of the authorized and unissued shares of preferred stock of the Corporation a series of preferred stock designated as the "3% Cumulative Convertible Preferred Stock". The number of shares constituting such series shall be 5,000.

2. DIVIDENDS.

(a) CUMULATIVE. The holders of the Preferred Shares shall be entitled to receive cumulative dividends, to the extent permitted by law, at the per share rate of three percent (3%) of the Liquidation Preference (as defined below) of each Preferred Share, per annum accruing daily and compounded semi-annually on June 30 and December 31 of each year (each a "DIVIDEND PAYMENT DATE") commencing with the first Dividend Payment Date occurring after the original issuance date of such share, (x) at least on a PARI PASSU basis with any payment of any dividends on the 6% Cumulative Convertible Preferred Stock of the Corporation (the "6% PREFERRED STOCK") and/or any class or series of preferred stock of the Corporation authorized after the date hereof and (y) in preference and priority to any payment of any dividend on the Common Stock (as defined below) and/or any other class or series of equity security of the Corporation. Such dividends shall accrue on any given share from the most recent date on which

a dividend has been paid with respect to such share, or if no dividends have been paid, from the date of the original issuance of such share, and such dividends shall accrue from day to day whether or not declared, based on the actual number of days elapsed. If at any time dividends on the outstanding Preferred Shares at the rate set forth above shall not have been paid or declared and set apart for payment with respect to all preceding periods, the amount of the deficiency shall be fully paid or declared and set apart for payment, but without interest, before any distribution, whether by way of dividend or otherwise, shall be declared or paid upon or set apart for the shares of any other class or series of equity security of the Corporation (other than the 6% Preferred Stock and/or any preferred stock of the Corporation authorized after the date hereof which shall be treated PARI PASSU with the Preferred Shares). For purposes of computing any per diem accrual, calculations shall be made using a 360-day year.

(b) STOCK PAYMENT OR CASH PAYMENT.

(i) The Corporation shall pay the dividends payable on the outstanding Preferred Shares on each Dividend Payment Date, to the extent permitted by law, either in cash or in shares of Common Stock, at the Corporation's option (subject to the terms hereof), provided that accrued but unpaid dividends on any Preferred Shares which are redeemed or repurchased hereunder or otherwise shall be paid in cash concurrently with such redemption or repurchase. Unless the Corporation shall deliver to all holders of Preferred Shares an irrevocable written notice (the "DIVIDEND NOTICE") on or before 4:30 p.m., New York time, on any Dividend Payment Date electing to pay dividends on the Preferred Shares in shares of Common Stock as of such Dividend Payment Date, the Corporation shall pay dividends on the Preferred Shares in cash. If the Corporation timely elects to so pay dividends in Common Stock, then the number of such shares to be issued on such Dividend Payment Date shall be the number determined by dividing (x) the dollar amount of dividends due by (y) the daily volume-weighted average sale price for the Common Stock on the Principal Market (as defined in the last sentence of this Section 2(b)) as reported by the AQR function on Bloomberg Financial Market ("VWAP") on the Dividend Payment Date.

(ii) The Corporation shall use its best efforts to issue and deliver such shares within three (3) Trading Days (as defined in the last sentence of this Section 2(b)(ii)) following the applicable Dividend Payment Date and, upon delivery, such shares shall be duly authorized, validly issued, fully paid, non-assessable and free and clear of all encumbrances, restrictions and legends. If the Corporation fails to issue such shares of Common Stock in such manner within five (5) Trading Days following the Dividend Payment Date, then the holders of Preferred Shares shall have the right, until such time as the shares are issued and only to the extent that such payment is permitted by law, to elect whether to receive such dividends (i) in cash or (ii) Common Stock. Until such election is made and the dividends are paid in accordance therewith, the amount of such dividends shall be deemed added to the Liquidation Preference. The term "TRADING DAY" means a day in which there is trading on the Nasdaq National Market or such other market or exchange on which the Common Stock is then principally traded (hereinafter referred to as the "PRINCIPAL MARKET"). If the Corporation is unable to pay dividends in either cash or Common Stock pursuant to this Section 2(b) as a matter of law, then the Corporation shall pay the dividends as soon as the Corporation is legally permitted to do so.

(c) Notwithstanding anything to the contrary contained herein, the Corporation may not pay dividends hereunder in shares of Common Stock (and must deliver cash in respect thereof) if, as of the Dividend Payment Date:

(i) assuming that such dividends were paid in shares of Common Stock, the number of shares of Common Stock at the time authorized, unissued and unreserved for all purposes, or held as treasury stock, would be insufficient to issue the number of shares issuable upon conversion of all Preferred Shares at the Conversion Price at such time;

(ii) such shares have not been listed on the Nasdaq National Market, the Nasdaq SmallCap Market, the New York Stock Exchange or the American Stock Exchange (or the Common Stock is suspended from trading on any such market or exchange) for more than 5 Trading Days (which need not be consecutive) since the immediately preceding Dividend Payment Date; provided, however, that this Section 2(c)(ii) shall not apply to suspensions of trading resulting from general suspensions of trading on such market or exchange;

(iii) the Corporation shall have failed to pay any dividend payments (to the extent such payments were permitted by law) when due on more than two occasions; or

(iv) such issuance would cause the ownership limitations contained in Section 5(i) below to be violated.

3. LIQUIDATION PREFERENCE. (a) In the event of any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary, the holders of the Preferred Shares shall be entitled to receive, out of the assets of the Corporation available for distribution to stockholders, at least on a PARI PASSU basis with distributions to the holders of 6% Preferred Stock and any class or series of preferred stock of the Corporation authorized after the date hereof and in preference and priority to any distributions to the holders of the Common Stock and/or any other class or series of equity security of the Corporation, the greater of (x) the amount of \$1,000 per share plus (i) dividends added to the Liquidation Preference in accordance with Section 2(b)(ii) above; (ii) all accrued but unpaid dividends; and (iii) all accrued but unpaid Delay Payments (as defined in the Registration Rights Agreement) payable pursuant to the Registration Rights Agreement (as defined below) (such aggregate dollar amount per share being referred to as the "LIQUIDATION PREFERENCE") and (y) an amount determined by the following calculation: $R \times P$, where "R" refers to the percentage of shares of Common Stock which the holders of Preferred Shares would have held if all of the Preferred Shares outstanding immediately prior to liquidation had been converted immediately prior to the liquidation and "P" refers to the total assets of the Corporation available for distribution to stockholders (other than to the holders of the 6% Preferred Stock (as such preferred stock is constituted on the date hereof)) if the aggregate Liquidation Preference is not paid.

(b) A Change of Control Transaction shall be deemed a liquidation, dissolution or winding up of the Corporation for purposes of this Section 3 unless the holders of a majority of the then outstanding Preferred Shares elect not to treat such Change of Control Transaction as a liquidation, dissolution or winding up by giving written notice thereof to the Corporation. A

"CHANGE IN CONTROL TRANSACTION" will be deemed to exist if (i) there occurs any consolidation, merger or other business combination of the Corporation with or into any other corporation or other entity or person (whether or not the Corporation is the surviving corporation), or any other corporate reorganization or transaction or series of related transactions in which in any of such events the voting stockholders of the Corporation prior to such event cease to own 50% or more of the voting stock, or corresponding voting equity interests, of the surviving corporation after such event (including without limitation any "going private" transaction under Rule 13e-3 promulgated pursuant to the Exchange Act or tender offer by the Corporation under Rule 13e-4 promulgated pursuant to the Exchange Act for 50% or more of the Corporation's Common Stock), (ii) any person (as defined in Section 13(d) of the Exchange Act), together with its affiliates and associates (as such terms are defined in Rule 405 under the Act), acquires or is deemed to acquire beneficial ownership (as described in Rule 13d-3 under the Exchange Act in excess of 50% of the Corporation's voting power, (iii) there is a replacement of more than one-half of the members of the Corporation's Board of Directors which is not approved by those individuals who are members of the Corporation's Board of Directors on the date thereof, (iv) in one or a series of related transactions, there is a sale or transfer of all or substantially all of the assets of the Corporation, determined on a consolidated basis, or (v) the execution by the Corporation of an agreement to which the Corporation is a party or which it is bound providing for an event set forth in (i), (ii), (iii) or (iv) above, pursuant to which the Common Stock is converted or reclassified into other securities, cash or property.

4. ISSUANCE OF PREFERRED SHARES. The Preferred Shares shall be issued by the Corporation pursuant to a Subscription Agreement, dated on or about the date hereof ("SUBSCRIPTION AGREEMENT") between the Corporation and the initial subscribers for the Preferred Shares thereunder (the "SUBSCRIBERS"), and holders of Preferred Shares shall enjoy the benefits of the Registration Rights Agreement, dated the date hereof ("REGISTRATION RIGHTS AGREEMENT") between such parties in connection with the Subscription Agreement.

5. CONVERSION. Each holder of the Preferred Shares shall have the right at any time and from time to time, at the option of such holder, to convert some or all Preferred Shares held by such holder, into such number of fully paid, validly issued and nonassessable shares ("COMMON SHARES") of common stock, par value \$0.01 of the Corporation ("COMMON STOCK"), free and clear of any liens, claims or encumbrances, as is determined by dividing (i) the Liquidation Preference times the number of Preferred Shares being converted (the "CONVERSION AMOUNT"), by (ii) the applicable Conversion Price determined as hereinafter provided in effect on the Conversion Date. Immediately following such conversion, the rights of the holders of converted Preferred Shares shall cease (other than the right to receive Common Stock upon conversion) and the persons entitled to receive the Common Shares upon the conversion of Preferred Shares shall be treated for all purposes as having become the owners of such Common Shares, subject to the rights provided herein to holders.

(a) MECHANICS OF CONVERSION.

(i) To convert Preferred Shares into Common Shares, the holder shall give written notice ("CONVERSION NOTICE") to the Corporation (via facsimile transmission on or before the Conversion Date (as defined in the next sentence) and overnight delivery no later than one Trading Day after the Conversion Date) in the form of EXHIBIT A hereto

stating (A) that such holder elects to convert Preferred Shares, (B) the number of Preferred Shares to be converted, (C) the number of and denomination of certificates for Common Shares that such holder wishes to be issued, (D) the name or names in which such holder wishes the certificate or certificates for Common Shares to be issued, (E) the number of and denomination of certificates for unconverted Preferred Shares to be issued to the holder, and (F) the date on which such conversion is to be effected, which date may not be prior to the date such Conversion Notice is received by the Corporation (the "CONVERSION DATE"). For the sake of clarity, a Conversion Notice shall be deemed received by the Corporation once the holder shall have received electronic confirmation of the Corporation's receipt thereof by facsimile transmission.

(ii) Upon or as soon as possible after delivery of the Conversion Notice, such holder shall surrender the certificate or certificates representing the Preferred Shares being converted, duly endorsed, at the office of the Corporation or, if identified in writing to all the holders by the Corporation, at the offices of any transfer agent for such shares. The date that the Preferred Shares being converted are received by the Corporation shall be referred to as the "SURRENDER DATE". Notwithstanding anything herein to the contrary, a holder of the Preferred Shares shall be entitled to deliver to the Corporation an affidavit of lost certificate in lieu of any certificate of Preferred Shares.

(iii) Except as provided in Section 5(a)(v) below, the Corporation shall, upon receipt of such Conversion Notice and in accordance therewith, issue and deliver to or upon the order of such holder, against delivery of the certificates representing the Preferred Shares which have been converted, (A) a certificate or certificates (with the number of and denomination of such certificates designated by such holder) for the number of Common Shares to which such holder shall be entitled, and (B) if less than all of such holder's Preferred Shares are being converted, issue and deliver to such holder a certificate or certificates (with the number of and denomination of such certificates designated by such holder) for the number of Preferred Shares (including any fractional shares) which such holder has not yet elected to convert hereunder but which are evidenced in part by the certificate(s) delivered to the Corporation in connection with such Conversion Notice. The Corporation shall (x) effect such issuance of Common Shares (and certificates for unconverted Preferred Shares) within three (3) Trading Days of the Surrender Date and (y) deliver the certificate(s) representing the Common Shares (and certificates for unconverted Preferred Shares) by messenger or overnight delivery service to reach the address designated by such holder within five (5) Trading Days after the Surrender Date.

(iv) A Conversion Notice shall be irrevocable, except that, if certificates evidencing the Common Shares (and certificates for unconverted Preferred Shares) are not issued by the Corporation within five (5) Trading Days of the Surrender Date or received by the holder within six (6) Trading Days of the Surrender Date, then the holder will be entitled to revoke and withdraw its Conversion Notice, in whole or in part, at any time prior to its receipt of those certificates, provided, however, that this Section 5(a)(iv) shall not apply if the Corporation has arranged for the delivery of such shares pursuant to Section 5(a)(v).

(v) In lieu of delivering physical certificates representing the Common Shares issuable upon conversion of Preferred Shares, provided the Corporation's transfer agent is participating in the Depository Trust Company ("DTC") Fast Automated Securities Transfer ("FAST") program, upon request of the holder, the Corporation shall use its best efforts to cause its transfer agent to electronically transmit the Common Shares issuable upon conversion or exercise to the holder, by crediting the account of the holder's prime broker with DTC through its Deposit Withdrawal Agent Commission ("DWAC") system. The time periods for delivery described above shall apply to the electronic transmittals through the DWAC system. The parties agree to coordinate with DTC to accomplish this objective.

(vi) INTENTIONALLY OMITTED.

(vii) The conversion pursuant to this Section 5 shall be deemed to have been made immediately prior to the close of business on the Conversion Date. The person or persons entitled to receive the Common Shares issuable upon such conversion shall be treated for all purposes as the record holder or holders of such Common Shares at the close of business on the Conversion Date.

(viii) The Corporation's obligation to issue Common Shares upon conversion of Preferred Shares shall, except as set forth below in this Section 5(a)(viii), be absolute, is independent of any covenant of any holder of Preferred Shares, and shall not be subject to: (A) any offset or defense; or (B) any claims against the holders of Preferred Shares whether pursuant to this Certificate, the Subscription Agreement, the Registration Rights Agreement or otherwise, including, without limitation, any claims arising out of any selling or short-selling activity by holders of Preferred Shares. Notwithstanding the foregoing, such obligation shall be subject to the holder's compliance with the notice and delivery requirements set forth above in this Section 5(a).

(b) Determination of Conversion Price. The Conversion Price applicable with respect to the Preferred Shares (the "CONVERSION PRICE"), shall be \$2.00, as may be adjusted in accordance herewith.

(c) Stock Splits; Dividends; Adjustments.

(i) If the Corporation, at any time while the Preferred Shares are outstanding, (A) shall pay a stock dividend or otherwise make a distribution or distributions on any equity securities (including instruments or securities convertible into or exchangeable for such equity securities) in shares of Common Stock, (B) subdivide outstanding shares of Common Stock into a larger number of shares, or (C) combine outstanding Common Stock into a smaller number of shares, then the Conversion Price shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding before such event and the denominator of which shall be the number of shares of Common Stock outstanding after such event. Any adjustment made pursuant to this Section 5(c)(i) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and

shall become effective immediately after the effective date in the case of a subdivision or combination.

(ii) INTENTIONALLY OMITTED.

(iii) If the Corporation, at any time while the Preferred Shares are outstanding, shall distribute to all holders of Common Stock evidences of its indebtedness or assets or cash or rights or warrants to subscribe for or purchase any security (excluding those referred to in Section 5(c)(i) above) of the Corporation or any of its subsidiaries, then concurrently with such distributions to holder of Common Stock, the Corporation shall distribute to holders of the Preferred Shares, the amount of such indebtedness, assets, cash or rights or warrants which the holders of Preferred Shares would have received had they converted their Preferred Shares (without regard to the limitation set forth in Section 5(i) below) into Common Shares immediately prior to the record date for such distribution.

(iv) Whenever the Conversion Price is adjusted pursuant to Section 5(c)(i) or (iii), the Corporation shall promptly mail to each holder of the Preferred Shares a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

(v) All calculations under this Section 5(c) shall be made to the nearest cent or to the nearest 1/100th of a share, as the case may be.

(vi) No adjustment in the Conversion Price shall reduce the Conversion Price below the par value of the Common Stock on the date hereof.

(vii) The Corporation from time to time in its sole discretion may reduce the Conversion Price by any amount for any period of time if the period is at least 20 Trading Days and if the reduction is irrevocable during the period. Whenever the Conversion Price is reduced, the Corporation shall (unless waived by two-thirds in interest of the holders of Preferred Shares) mail to the holders of Preferred Shares a notice of the reduction. The Corporation shall mail, first class, postage prepaid, the notice at least 10 days before the date that the reduced Conversion Price shall take effect. The notice shall state the reduced Conversion Price and the period it will be in effect. A reduction of the Conversion Price does not change or adjust the Conversion Price otherwise in effect for purposes of Section 5(c)(i) or (iii).

(d) NOTICE OF RECORD DATE. In the event of any taking by the Corporation of a record date of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, any security or right convertible into or entitling the holder thereof to receive additional Common Shares, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, the Corporation shall deliver to each holder of Preferred Shares at least 20 days prior to the date specified therein, a notice specifying the date on which any such record is to be taken for the purpose of such dividend, distribution, security or right and the amount and character of such dividend, distribution, security or right.

(e) ISSUE TAXES. The Corporation shall pay any and all documentary or stamp or similar issue or transfer taxes, excluding any income, franchise or similar taxes, that may be payable in respect of any issue or delivery of Common Shares on conversion of Preferred Shares pursuant hereto. However, the holder of any Preferred Shares shall pay any tax that is due because the Common Shares issuable upon conversion thereof are issued in a name other than such holder's name.

(f) RESERVATION OF STOCK ISSUABLE UPON CONVERSION. The Corporation shall at all times reserve and keep available out of its authorized but unissued Common Stock, solely for the purposes of effecting the conversion of the Preferred Shares, an amount of Common Shares equal to 150% of the number of shares issuable upon conversion of the Preferred Shares at the then applicable Conversion Price. The Corporation promptly will take such corporate action as may, in the opinion of its outside counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose, including without limitation engaging in best efforts to obtain the requisite stockholder approval.

(g) FRACTIONAL SHARES. No fractional shares shall be issued upon the conversion of any Preferred Shares. All Common Shares (including fractions thereof) issuable upon conversion of more than one Preferred Share by a holder thereof and all Preferred Shares issuable upon the purchase thereof shall be aggregated for purposes of determining whether the conversion and/or purchase would result in the issuance of any fractional share. If, after the aforementioned aggregation, the conversion and/or purchase would result in the issuance of a fraction of a share of Common Stock, the Corporation shall, in lieu of issuing any fractional share, either round up the number of shares to the next highest whole number or, at the Corporation's option, pay the holder otherwise entitled to such fraction a sum in cash equal to the fair market value of such fraction on the Conversion Date (as determined in good faith by the Board of Directors of the Corporation based upon the VWAP on the Conversion Date or, if such date was not a Trading Day, on the next Trading Day thereafter).

(h) REORGANIZATION, MERGER OR GOING PRIVATE. At any time which the Preferred Shares are outstanding, in case of any reorganization or any reclassification of the capital stock of the Corporation or any consolidation or merger of the Corporation with or into any other corporation or corporations or a sale or transfer of all or substantially all of the assets of the Corporation to any other person or a "going private" transaction under Rule 13e-3 promulgated pursuant to the Exchange Act, then, as part of such reorganization, consolidation, merger, or transfer if the holders of shares of Common Stock receive any publicly traded securities as part or all of the consideration for such reorganization, consolidation, merger or sale, it shall be a condition precedent of any such event or transaction that provision shall be made such that each Preferred Share shall thereafter be convertible into such new securities at a conversion price and pricing formula which places the holders of Preferred Shares in an economically equivalent position as they would have been if not for such event. In addition to the foregoing, if the holders of shares of Common Stock receive any non-publicly traded securities or other property or cash as part or all of the consideration for such reorganization, consolidation, merger or sale, then such distribution shall be treated to the extent thereof as a distribution under Section 5(c)(iii) above and such Section shall also apply to such distribution.

(i) LIMITATIONS ON HOLDER'S RIGHT TO CONVERT.

(i) Notwithstanding anything to the contrary contained herein, the number of shares of Common Stock that may be acquired by a holder at any time upon conversion of Preferred Shares pursuant to the terms hereof shall not exceed a number that, when added to the total number of shares of Common Stock deemed beneficially owned by such holder at such time (other than by virtue of the ownership of securities or rights to acquire securities (including the Preferred Shares and Warrants) that have limitations on the holder's right to convert, exercise or purchase similar to the limitation set forth in this Section 5(i)), together with all shares of Common Stock deemed beneficially owned (other than by virtue of the ownership of securities or rights to acquire securities that have limitations on the right to convert, exercise or purchase similar to the limitation set forth herein) by the holder's "affiliates" (as defined in Rule 144 of the Securities Act) ("AGGREGATION PARTIES") that would be aggregated for purposes of determining whether a group under Section 13(d) of the Exchange Act, exists, would exceed 9.99% of the total issued and outstanding shares of the Common Stock (the "RESTRICTED OWNERSHIP PERCENTAGE"). Each holder shall have the right (x) at any time and from time to time to reduce its Restricted Ownership Percentage immediately upon notice to the Corporation and (y) (subject to waiver) at any time and from time to time, to increase its Restricted Ownership Percentage immediately in the event of the announcement as pending or planned, of a Change in Control Transaction (as defined below). The Corporation's obligation to issue Common Stock which would exceed such limits referred to in this Section 5(i) shall be suspended to the extent necessary until such time, if any, as shares of Common Stock may be issued in compliance herewith.

(ii) Notwithstanding anything contained herein, in no event shall the Corporation issue shares of Common Stock hereunder to the extent that the total number of shares issued or deemed issued to a holder under the Subscription Agreement would exceed such holder's pro rata share (in the event that there is more than one holder) of 19.99% of the Corporation's issued and outstanding shares of Common Stock on the date of issuance hereof, unless otherwise approved by the Corporation's stockholders. If the Corporation has not obtained stockholder approval on or before the date that delivery of the shares is required, the Corporation shall redeem such holder's Preferred Shares to the extent the conversion thereof would exceed the 19.99% limit. The redemption price shall be the price determined under Section 5(k) below.

(j) CERTIFICATE FOR CONVERSION PRICE ADJUSTMENT. The Corporation shall promptly furnish or cause to be furnished to each holder a certificate prepared by the Corporation setting forth any adjustments or readjustments of the Conversion Price pursuant to this Section 5.

(k) MANDATORY REPURCHASE. If a "Registration Failure" (as defined in the next sentence) shall occur, each holder shall have the unilateral option and right to compel the Corporation to repurchase, to the extent permitted by law, any or all of such holder's Preferred Shares within 3 days of a written notice requiring such repurchase ("T+3"), at a price per Preferred Share equal to the greater of (A) 100% of the Liquidation Preference then in effect and (B) the amount determined by the following calculation: $(LP/CP) \times VWAP$, where "LP" refers to the Liquidation Preference, "CP" refers to the Conversion Price in effect on the date used to determine "VWAP" and, for the purposes of this Section 5(k), "VWAP" refers to the greater of (x) the VWAP on the Trading Day immediately preceding the day constituting T+3 and (y) the

VWAP on the closing date of the repurchase of such holder's Preferred Shares. A "REGISTRATION FAILURE" shall be deemed to occur in the event that a Registration Statement covering the Registrable Securities (as defined in the Registration Rights Agreement) shall not have been declared effective by the Securities Exchange Commission at any time on or prior to the nine (9) month anniversary of the Closing Date. If the Corporation is unable to repurchase all of a holder's Preferred Shares pursuant to this Section 5(k) as a matter of law (the "MANDATORY REPURCHASE OBLIGATION"), the Mandatory Repurchase Obligation shall be discharged as soon as the Corporation has funds legally available to discharge such Mandatory Repurchase Obligation.

(1) MANDATORY CONVERSION. If more than 75% of the Preferred Shares originally issued under the Subscription Agreement are no longer outstanding, the remaining Preferred Shares shall automatically convert into shares of Common Stock at the then-existing Conversion Price, provided, that such mandatory conversion shall not occur unless and until the shares of Common Stock issuable upon such conversion are subject to Effective Registration. For the purposes hereof, "EFFECTIVE REGISTRATION" shall mean: (i) the resale of Registrable Securities (as defined in the Registration Rights Agreement) is covered by an effective registration statement and such registration statement is not subject to any suspension or stop orders; (ii) the resale of such securities may be effected pursuant to a current and deliverable prospectus that is not subject to any blackout or similar circumstance; (iii) the securities are listed on an Approved Market and are not subject to any trading suspension; and (iv) none of the Corporation or any direct or indirect subsidiary of the Corporation is subject to any bankruptcy, insolvency or similar proceeding.

6. REDEMPTION. On the second anniversary of the date hereof (the "REDEMPTION DATE"), the Corporation shall redeem all outstanding Preferred Shares for cash, to the extent the Corporation has funds legally available therefor, at a redemption price per share equal to the Liquidation Preference. If the Corporation is unable or shall fail to discharge its obligation to redeem all outstanding Preferred Shares pursuant to this Section 6 (the "MANDATORY REDEMPTION OBLIGATION"), the Mandatory Redemption Obligation shall be discharged as soon as the Corporation has funds legally available to discharge such Mandatory Redemption Obligation.

7. VOTING RIGHTS. In addition to all other requirements imposed by Delaware law, and all other voting rights granted under the Corporation's Certificate of Incorporation, the affirmative vote of two-thirds in interest of the Corporation's outstanding Preferred Shares shall be necessary for (i) any amendment, modification or repeal of this Certificate of Designations (whether by merger, consolidation or otherwise) or (ii) any amendment to the Certificate of Incorporation or by-laws of the Corporation that may amend or change or adversely affect any of the rights, preferences, or privileges of the Preferred Shares, provided, however, that holders of Preferred Shares that are affiliates of the Corporation (and the Corporation itself) shall not participate in such vote and the Preferred Shares of such holders shall be disregarded and deemed not to be outstanding for purposes of such vote.

8. NOTICES. The Corporation shall distribute to the holders of Preferred Shares copies of all notices, materials, annual and quarterly reports, proxy statements, information statements and any other documents distributed generally to the holders of shares of Common Stock of the

Corporation, at such times and by such method as such documents are distributed to such holders of such Common Stock.

9. REPLACEMENT CERTIFICATES. The certificate(s) representing the Preferred Shares held by any holder of Preferred Shares may be exchanged by such holder at any time and from time to time for certificates with different denominations representing an equal aggregate number of Preferred Shares, as reasonably requested by such holder, upon surrendering the same. No service charge will be made for such registration or transfer or exchange.

10. NO REISSUANCE. No Preferred Shares acquired by the Corporation by reason of redemption, purchase, conversion or otherwise shall be reissued.

11. SEVERABILITY OF PROVISIONS. If any right, preference or limitation of the Preferred Shares set forth in this Certificate of Designations (as this Certificate of Designations may be amended from time to time) is invalid, unlawful or incapable of being enforced by reason of any rule or law or public policy, all other rights, preferences and limitations set forth in this Certificate of Designations, which can be given effect without the invalid, unlawful or unenforceable right, preference or limitation shall nevertheless remain in full force and effect, and no right, preference or limitation herein set forth be deemed dependent upon any such other right, preference or limitation unless so expressed herein.

12. LIMITATIONS. Except as may otherwise be required by law and as are set forth in the Subscription Agreement and the Registration Rights Agreement, the Preferred Shares shall not have any powers, preference or relative participating, optional or other special rights other than those specifically set forth in this Certificate of Designation (as may be amended from time to time) or otherwise in the Certificate of Incorporation of the Corporation.

13. SPECIFIC PERFORMANCE. The Corporation acknowledges and agrees that irreparable damage would occur in the event that the Corporation failed to perform any of the provisions of this Certificate in accordance with its specific terms. It is accordingly agreed that each holder of Preferred Shares shall be entitled to specific performance, injunctive relief or other equitable remedies to prevent or cure breaches of the provisions of this Certificate and to enforce specifically the terms and provisions hereof, this being in addition to any other remedy to which such holder may be entitled under agreement, at law or equity.

14. WAIVERS. The holders of 75% of the outstanding Preferred Shares may waive compliance by the Corporation with any provision of, or a breach by the Corporation of any provision of, this Certificate of Designations, and any such waiver shall be binding upon all holders of the Preferred Shares.

Signed on December 4, 2001

STEMCELLS, INC.

By: /s/ Martin McGlynn

Name: Martin McGlynn
Title: President and CEO

NEITHER THESE SECURITIES NOR THE SECURITIES INTO WHICH THESE SECURITIES ARE EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS THEREUNDER AND IN COMPLIANCE WITH APPLICABLE STATE SECURITIES OR BLUE SKY LAWS.

STEMCELLS, INC.

WARRANT

Warrant No. [_____] Dated: December 4, 2001

STEMCELLS, INC., a Delaware corporation (the "COMPANY"), hereby certifies that, for value received, RIVERVIEW GROUP, L.L.C., or its registered assigns ("HOLDER"), is entitled, subject to the terms set forth below, to purchase from the Company a total of 350,877 shares of common stock, \$.01 par value per share (the "COMMON STOCK"), of the Company (each such share, a "Warrant Share" and all such shares, the "WARRANT SHARES") at an exercise price equal to \$3.42 per share (as adjusted from time to time as provided in Section 9, the "EXERCISE PRICE"), at any time and from time to time from and after the date hereof and through and including December 4, 2005 (the "EXPIRATION DATE"), and subject to the following terms and conditions:

1. REGISTRATION OF WARRANT. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the "WARRANT REGISTER"), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, and the Company shall not be affected by notice to the contrary.

2. REGISTRATION OF TRANSFERS AND EXCHANGES.

(a) The Company shall register the transfer of any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, with the Form of Assignment attached hereto duly completed and signed, to the Transfer Agent or to the Company at the office specified in or pursuant to Section 3(b). Upon any such registration or transfer, a new warrant to purchase Common Stock, in substantially the form of this Warrant (any such new warrant, a "NEW WARRANT"), evidencing the portion of this Warrant so transferred shall be issued to the transferee and a New Warrant evidencing the remaining portion of this Warrant not so transferred, if any, shall be issued to the transferring Holder. The acceptance of the New

Warrant by the transferee thereof shall be deemed the acceptance of such transferee of all of the rights and obligations of a holder of a Warrant.

(b) This Warrant is exchangeable, upon the surrender hereof by the Holder to the office of the Company specified in or pursuant to Section 3(b) for one or more New Warrants, evidencing in the aggregate the right to purchase the number of Warrant Shares which may then be purchased hereunder. Any such New Warrant will be dated the date of such exchange.

3. DURATION, EXERCISE AND REDEMPTION OF WARRANTS.

(a) This Warrant shall be exercisable by the registered Holder on any business day before 5:00 P.M., New York City time, at any time and from time to time on or after the date hereof to and including the Expiration Date. At 5:00 P.M., New York City time on the Expiration Date, the portion of this Warrant not exercised prior thereto shall be and become void and of no value.

(b) Subject to Sections 5, 10 and 11, upon surrender of this Warrant, with the Form of Election to Purchase attached hereto duly completed and signed, to the Company at its address for notice set forth in Section 12 and upon payment of the Exercise Price multiplied by the number of Warrant Shares that the Holder intends to purchase hereunder, in the manner provided hereunder, all as specified by the Holder in the Form of Election to Purchase, the Company shall promptly (but in no event later than 3 business days after the Date of Exercise (as defined herein)) issue or cause to be issued and cause to be delivered to or upon the written order of the Holder and in such name or names as the Holder may designate, a certificate for the Warrant Shares issuable upon such exercise, free of restrictive legends except either (i) in the event that a registration statement covering the resale of the Warrant Shares and naming the Holder as a selling stockholder thereunder is not then effective, and the Warrant Shares are not freely transferable without volume restrictions pursuant to Rule 144(k) promulgated under the Securities Act of 1933, as amended (the "SECURITIES ACT"), or (ii) if this Warrant shall have been issued pursuant to a written agreement between the original Holder and the Company, as required by such agreement. Any person so designated by the Holder to receive Warrant Shares shall be deemed to have become holder of record of such Warrant Shares as of the Date of Exercise of this Warrant.

A "DATE OF EXERCISE" means the date on which the Company shall have received (i) this Warrant (or any New Warrant, as applicable), with the Form of Election to Purchase attached hereto (or attached to such New Warrant) appropriately completed and duly signed, and (ii) payment of the Exercise Price for the number of Warrant Shares so indicated by the holder hereof to be purchased.

(c) This Warrant shall be exercisable, either in its entirety or, from time to time, for a portion of the number of Warrant Shares. In the event that the Warrant is not exercised in full, the number of Warrant Shares shall be reduced by the number of such Warrant Shares for which this Warrant is exercised, and the Company at its expense, within five (5) business days issue and deliver to the Holder a New Warrant in the name of the Holder or as the Holder may request, reflecting such adjusted Warrant Shares.

(d) In lieu of delivering physical certificates representing the Warrant Shares issuable upon conversion of this Warrant, provided the Company's transfer agent is participating in the Depository Trust Company ("DTC") Fast Automated Securities Transfer ("FAST") program, upon request of the Holder, the Company shall use its best efforts to cause its transfer agent to electronically transmit the Warrant Shares issuable upon exercise to the Holder, by crediting the account of the Holder's prime broker with DTC through its Deposit Withdrawal Agent Commission ("DWAC") system. The time periods for delivery described above shall apply to the electronic transmittals through the DWAC system. The Company agrees to coordinate with DTC to accomplish this objective.

4. REGISTRATION RIGHTS. This Warrant and the Holder hereof are entitled to the benefits of, and subject to the terms and condition of and obligations under, that certain Registration Rights Agreement dated the date hereof between the Company and the original Holder (the "REGISTRATION RIGHTS AGREEMENT").

5. FRACTIONAL SHARES. The Company shall not be required to issue or cause to be issued fractional Warrant Shares on the exercise of this Warrant. The number of full Warrant Shares which shall be issuable upon the exercise of this Warrant shall be computed on the basis of the aggregate number of Warrant Shares purchasable on exercise of this Warrant so presented. If any fraction of a Warrant Share would, except for the provisions of this Section, be issuable on the exercise of this Warrant, the Company shall pay an amount in cash equal to the fair market value of such share as of the Date of Exercise multiplied by such fraction.

6. PAYMENT OF TAXES. The Company will pay all documentary stamp taxes attributable to the issuance of Warrant Shares upon the exercise of this Warrant; provided, however, that the Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the registration of any certificates for Warrant Shares or Warrants in a name other than that of the Holder. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. REPLACEMENT OF WARRANT. If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction and indemnity, if requested, satisfactory to it. Applicants for a New Warrant under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable charges as the Company may prescribe.

8. RESERVATION OF WARRANT SHARES. The Company covenants that it will at all times reserve and keep available out of the aggregate of its authorized but unissued Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares which are then issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other actual contingent purchase rights of persons other than the Holder (taking into account the adjustments and restrictions of Section 9). The Company covenants that all Warrant Shares that shall be so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price in

accordance with the terms hereof, be duly and validly authorized, issued and fully paid and nonassessable.

9. CERTAIN ADJUSTMENTS. The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant are subject to adjustment from time to time as set forth in this Section. Upon each such adjustment of the Exercise Price pursuant to this Section, the Holder shall thereafter prior to the Expiration Date be entitled to purchase, at the Exercise Price resulting from such adjustment, the number of Warrant Shares obtained by multiplying the Exercise Price in effect immediately prior to such adjustment by the number of Warrant Shares issuable upon exercise of this Warrant immediately prior to such adjustment and dividing the product thereof by the Exercise Price resulting from such adjustment.

(a) If the Company, at any time while this Warrant is outstanding, (i) shall pay a stock dividend or otherwise make a distribution or distributions on shares of its Common Stock or on any other class of capital stock payable in shares of Common Stock (except dividends or distributions paid on preferred or other senior stock), (ii) subdivide outstanding shares of Common Stock into a larger number of shares, or (iii) combine outstanding shares of Common Stock into a smaller number of shares, the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding before such event and of which the denominator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding after such event. Any adjustment made pursuant to this Section shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision or combination, and shall apply to successive subdivisions and combinations.

(b) In case of any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is converted into other securities, cash or property, then the Holder shall have the right thereafter to exercise this Warrant only into the shares of stock and other securities and property receivable upon or deemed to be held by holders of Common Stock following such reclassification or share exchange, and the Holder shall be entitled upon such event to receive such amount of securities or property as such Holder would have been entitled to receive if such Holder had exercised this Warrant immediately prior to such reclassification or share exchange (net of the applicable Exercise Price). The terms of any such reclassification or share exchange shall include such terms so as to continue to give to the Holder the right to receive the securities or property set forth in this Section 9(b) upon any exercise following any such reclassification or share exchange.

(c) If the Company, at any time while this Warrant is outstanding, shall distribute to all holders of Common Stock (and not to holders of this Warrant) evidences of its indebtedness or assets or rights or warrants to subscribe for or purchase any security (excluding those referred to in Sections 9(a), (b) and (d)), then in each such case the Exercise Price shall be determined by multiplying the Exercise Price in effect immediately prior to the record date fixed for determination of stockholders entitled to receive such distribution by a fraction of which the denominator shall be the Exercise Price determined as of the record date mentioned above, and of which the numerator shall be such Exercise Price on such record date

less the then fair market value at such record date of the portion of such assets or evidence of indebtedness so distributed applicable to one outstanding share of Common Stock as determined by the Company's independent certified public accountants that regularly examine the financial statements of the Company (an "APPRAISER").

(d) If at any time the Company or any subsidiary thereof shall issue shares of Common Stock or rights, warrants, options or other securities or debt that is convertible into or exchangeable for shares of Common Stock ("COMMON STOCK EQUIVALENTS"), entitling any person or entity to acquire shares of Common Stock at a price per share less than the market price of the Common Stock at the time of issuance, forthwith upon such issue or sale, the Exercise Price shall be reduced to the price (calculated to the nearest cent) determined by multiplying the Exercise Price in effect immediately prior thereto by a fraction, the numerator of which shall be the sum of (i) the number of shares of Common Stock outstanding immediately prior to such issuance, and (ii) the number of shares of Common Stock which the aggregate consideration received (or to be received, assuming exercise or conversion in full of such Common Stock Equivalents) for the issuance of such additional shares of Common Stock would purchase at the Exercise Price, and the denominator of which shall be the sum of the number of shares of Common Stock outstanding immediately after the issuance of such additional shares. For purposes hereof, all shares of Common Stock that are issuable upon conversion, exercise or exchange of Common Stock Equivalents shall be deemed outstanding immediately after the issuance of such Common Stock Equivalents. Such adjustment shall be made whenever such Common Stock or Common Stock Equivalents are issued. However, upon the expiration of any Common Stock Equivalents the issuance of which resulted in an adjustment in the Exercise Price pursuant to this Section, the Exercise Price shall immediately upon such expiration be recomputed and effective immediately upon such expiration be increased to the price which it would have been (but reflecting any other adjustments in the Exercise Price made pursuant to the provisions of this Section after the issuance of such Common Stock Equivalents) had the adjustment of the Exercise Price made upon the issuance of such Common Stock Equivalents been made on the basis of offering for subscription or purchase only that number of shares of the Common Stock actually purchased upon the exercise of such Common Stock Equivalents actually exercised. Notwithstanding anything herein to the contrary, (x) issuances of any stock or stock options under any bona fide employee benefit plan or compensation arrangement of the Company and (y) issuances of shares of Common Stock or Common Stock Equivalents with respect to a Board Approved Transaction (as defined herein), shall not be subject to the provisions of this Section.

A "BOARD APPROVED TRANSACTION" is a transaction involving a strategic alliance, acquisition of stock or assets, merger, collaboration, joint venture, partnership or similar arrangement of the Company with another corporation, partnership or other business entity (A) which is engaged in a business similar complementary or related to the business of the Company or (B) pursuant to which the Company issues securities with the primary purpose to directly or indirectly acquire, license or otherwise become entitled to use technology relevant to or useful in the Company's business, so long as the Company's Board of Directors by resolution duly adopted approves such transaction in accordance with its duties under applicable law.

(e) In case of any (1) merger or consolidation of the Company with or into another Person, or (2) sale by the Company of more than one-half of the assets of the Company

(on a market value basis) in one or a series of related transactions, or (3) tender or other offer or exchange (whether by the Company or another Person) pursuant to which holders of Common Stock are permitted to tender or exchange their shares for other securities, stock, cash or property of the Company or another Person; then the Holder shall have the right, upon or after such transfer, merger, consolidation, sale, offer or exchange, to (A) exercise this Warrant for the shares of stock and other securities, cash and property receivable upon or deemed to be held by holders of Common Stock following such merger, consolidation or sale, and the Holder shall be entitled to receive such amount of securities, cash and property as the Common Stock for which this Warrant could have been exercised immediately prior to such merger, consolidation or sales would have been entitled, (B) in the case of a merger or consolidation, require the surviving entity to issue to the Holder a warrant entitling the Holder to acquire shares of such entity's common stock, which warrant shall have terms identical MUTATIS MUTANDIS (including with respect to exercise) to the terms of this Warrant and shall entitle the holder thereof to all of the rights and privileges set forth herein and in the agreements pursuant to which this Warrant was issued (including, without limitation, as such rights relate to the acquisition, transferability, registration and listing of such shares of stock or other securities issuable upon exercise thereof) MUTATIS MUTANDIS, or (C) in the event of an exchange or tender offer or other transaction contemplated by clause (3) of this Section 9(e), tender or exchange this Warrant for such securities, stock, cash and other property receivable upon or deemed to be held by holders of Common Stock that have tendered or exchanged their shares of Common Stock following such tender or exchange, and the Holder shall be entitled upon such exchange or tender to receive such amount of securities, cash and property as the shares of Common Stock for which this Warrant could have been exercised immediately prior to such tender or exchange would have been entitled (net of the applicable Exercise Price). In the case of clause (B), the exercise price applicable for the newly issued warrant shall be based upon the amount of securities, cash and property that each share of Common Stock would receive in such transaction and the Exercise Price immediately prior to the effectiveness or closing date for such transaction. The terms of any such merger, sale, consolidation, tender or exchange shall include such terms so as to continue to give the Holder the right to receive the securities, cash and property set forth in this Section upon any conversion or exercise following such event. This provision shall similarly apply to successive such events.

(f) For the purposes of this Section 9, the following clauses shall also be applicable:

(i) RECORD DATE. In case the Company shall take a record of the holders of its Common Stock for the purpose of entitling them (A) to receive a dividend or other distribution payable in Common Stock or in securities convertible or exchangeable into shares of Common Stock, or (B) to subscribe for or purchase Common Stock or securities convertible or exchangeable into shares of Common Stock, then such record date shall be deemed to be the date of the issue or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase, as the case may be.

(ii) TREASURY SHARES. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Company.

(g) All calculations under this Section 9 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be.

(h) If (i) the Company shall declare a dividend (or any other distribution) on its Common Stock; or (ii) the Company shall declare a special nonrecurring cash dividend on or a redemption of its Common Stock; or (iii) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights; or (iv) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property; or (v) the Company shall authorize the voluntary dissolution, liquidation or winding up of the affairs of the Company, then the Company shall cause to be mailed to each Holder at their last addresses as they shall appear upon the Warrant Register, at least 30 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, grant of rights or warrants, or if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, share exchange, dissolution, liquidation or winding up; provided, however, that the failure to mail such notice or any defect therein or in the mailing thereof shall not affect the validity of the corporate action required to be specified in such notice.

10. PAYMENT OF EXERCISE PRICE. The Holder shall pay the Exercise Price in one of the following manners:

(a) CASH EXERCISE. The Holder may deliver immediately available funds;
or

(b) CASHLESS EXERCISE. At any time after the earlier to occur of the SEC Effective Date or the Effectiveness Required Date (as such terms are defined in the Registration Rights Agreement), when a registration statement covering the resale of the Warrant Shares and naming the Holder as a selling stockholder thereunder is not then effective or sales may not be effected for any reason pursuant to such registration statement and related prospectus, the Holder may surrender this Warrant to the Company together with a notice of cashless exercise, in which event the Company shall issue to the Holder the number of Warrant Shares determined as follows:

$$X = Y [(A-B)/A]$$

where:

X = the number of Warrant Shares to be issued
to the Holder.

Y = the number of Warrant Shares with respect to which this Warrant is being exercised.

A = the average of the closing sale prices of the Common Stock for the five (5) trading days immediately prior to (but not including) the Date of Exercise.

B = the Exercise Price.

For purposes of Rule 144 promulgated under the Securities Act, it is intended, understood and acknowledged that the Warrant Shares issued in a cashless exercise transaction shall be deemed to have been acquired by the Holder, and the holding period for the Warrant Shares shall be deemed to have been commenced, on the issue date of this Warrant.

11. CERTAIN EXERCISE RESTRICTIONS.

(a) Notwithstanding anything to the contrary contained herein, the number of shares of Common Stock that may be acquired by the Holder upon exercise pursuant to the terms hereof shall not exceed a number that, when added to the total number of shares of Common Stock deemed beneficially owned by such Holder (other than by virtue of the ownership of securities or rights to acquire securities that have limitations on the Holder's right to convert, exercise or purchase similar to the limitation set forth herein), together with all shares of Common Stock deemed beneficially owned (other than by virtue of the ownership of securities or rights to acquire securities that have limitation set forth herein) by the Holder's "affiliates" (as defined in Rule 144 of the Securities Act) ("AGGREGATION PARTIES"), that would be aggregated for purposes of determining whether a group under Section 13(d) of the Securities Exchange Act of 1934, as amended, exists would exceed 9.99% of the total issued and outstanding shares of the Common Stock (the "RESTRICTED OWNERSHIP PERCENTAGE"). Each Holder shall have the right (w) at any time and from time to time to reduce its Restricted Ownership Percentage immediately upon notice to the Company and (x) (subject to waiver) at any time and from time to time, to increase its Restricted Ownership Percentage immediately in the event of the announcement as pending or planned, of a merger or consolidation of the Company, a sale of all or substantially all of the assets of the Company or the acquisition by any third party (and/or such party's Aggregation Parties) of at least 51% of the Company's outstanding Common Stock. The Company's obligation to issue shares of Common Stock which would exceed such limited shall be suspended to the extent necessary until such time, if any, as shares of Common Stock may be issued in compliance with such restrictions.

12. NOTICES. Any and all notices or other communications or deliveries hereunder shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile telephone number specified in this Section prior to 6:30 p.m. (New York City time) on a business day, (ii) the business day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile telephone number specified in this Section later than 6:30 p.m. (New York City time) on any date and earlier than 11:59 p.m. (New York City time) on such date, (iii) the business day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required

to be given. The addresses for such communications shall be: (i) if to the Company, 3155 Porter Drive, Palo Alto, California 94086, with a copy to Ropes & Gray, One International Place, Boston, Massachusetts, 02110, Attention: Geoffrey B. Davis, Esq., (facsimile number (617) 951-7050), or (ii) if to the Holder, to the Holder at the address or facsimile number appearing on the Warrant Register or such other address or facsimile number as the Holder may provide to the Company in accordance with this Section, with a copy to Kleinberg, Kaplan, Wolff & Cohen, P.C., 551 Fifth Avenue, New York, New York 10176, Attention: Stephen M. Schultz, Esq., (facsimile number (212) 986-8866).

13. WARRANT AGENT. The Company shall serve as warrant agent under this Warrant. Upon thirty (30) days' notice to the Holder, the Company may appoint a new warrant agent. Any corporation into which the Company or any new warrant agent may be merged or any corporation resulting from any consolidation to which the Company or any new warrant agent shall be a party or any corporation to which the Company or any new warrant agent transfers substantially all of its corporate trust or shareholders services business shall be a successor warrant agent under this Warrant without any further act. Any such successor warrant agent shall promptly cause notice of its succession as warrant agent to be mailed (by first class mail, postage prepaid) to the Holder at the Holder's last address as shown on the Warrant Register.

14. MISCELLANEOUS.

(a) This Warrant shall be binding on and inure to the benefit of the parties hereto and their respective successors and assigns. Subject to the Subscription Agreement entered into between the Company and the Holder on the date hereof and applicable securities laws, this Warrant shall be freely transferable. This Warrant may be amended only in writing signed by the Company and the Holder and their successors and assigns.

(b) Subject to Section 14(a), above, nothing in this Warrant shall be construed to give to any person or corporation other than the Company and the Holder any legal or equitable right, remedy or cause under this Warrant. This Warrant shall inure to the sole and exclusive benefit of the Company and the Holder.

(c) The corporate laws of the State of Delaware shall govern all issues concerning the relative rights of the Company and its stockholders. All other questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. The Company and the Holder hereby irrevocably submit to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, or that such suit, action or proceeding is improper. Each of the Company and the Holder hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by certified mail, return receipt requested, and agrees that such service shall

constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law.

(d) The headings herein are for convenience only, do not constitute a part of this Warrant and shall not be deemed to limit or affect any of the provisions hereof.

(e) In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby and the parties will attempt in good faith to agree upon a valid and enforceable provision which shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

IN WITNESS WHEREOF, the Company has caused this Warrant to be duly executed by its authorized officer as of the date first indicated above.

STEMCELLS, INC.

By: /s/ Martin McGlynn

Name: Martin McGlynn

Title: President and CEO

FORM OF ELECTION TO PURCHASE

To: STEMCELLS, INC.

(1) The undersigned hereby elects to exercise its Warrant for and to purchase thereunder, _____ shares of Common Stock, [AND HERewith MAKES PAYMENT THEREFOR OF \$_____] [OR] [AND ELECTS TO UTILIZE THE CASHLESS EXERCISE PROVISIONS OF SECTION 10(b) OF THIS WARRANT, RESULTING IN _____ SHARES OF COMMON STOCK ISSUABLE HEREUNDER].

(2) Please issue a certificate or certificates representing said shares of Common Stock in the name of the undersigned or in such other name as is specified below:

(Name)

(Address)

(Tax Identification or Social Security #)

(3) Please issue a New Warrant (as defined in the Warrant) for the unexercised portion of the attached Warrant in the name of the undersigned or in such other name as is specified below:

(NAME)

(SIGNATURE)

(DATE)

(ADDRESS)]

Dated:

Signature

FORM OF ASSIGNMENT

[To be completed and signed only upon transfer of Warrant]

FOR VALUE RECEIVED, the undersigned hereby sells, assigns and transfers unto _____ the right represented by the within Warrant to purchase _____ shares of Common Stock of StemCells, Inc. to which the within Warrant relates and appoints _____ attorney to transfer said right on the books of StemCells, Inc. with full power of substitution in the premises.

Dated:

- _____, ----

(Signature must conform in all respects to name of holder as specified on the face of the Warrant)

Address of Transferee

In the presence of:

- _____

=====

SUBSCRIPTION AGREEMENT

DATED AS OF DECEMBER 4, 2001

BY AND BETWEEN

STEMCELLS, INC.

AND

RIVERVIEW GROUP, L.L.C.

CONVERTIBLE PREFERRED STOCK
AND
WARRANTS

=====

THIS SUBSCRIPTION AGREEMENT, dated this 4th day of December, 2001, (this "AGREEMENT") by and between STEMCELLS, INC., a Delaware corporation (the "COMPANY"), with headquarters located at 3155 Porter Drive, Palo Alto, California 94304, and Riverview Group, L.L.C., a Delaware limited liability company (the "BUYER").

W I T N E S S E T H:

WHEREAS, the Company desires to sell and issue to the Buyer, and the Buyer wish to purchase from the Company: (i) shares of the Company's 3% Cumulative Convertible Preferred Stock, liquidation preference \$1,000 per share (all such shares being "PREFERRED SHARES"), having the rights, designations and preferences set forth in the Certificate of Designations (the "CERTIFICATE") in the form of EXHIBIT 1 attached hereto, which Preferred Shares shall be convertible into the number of shares of the Company's common stock, par value \$.01 per share ("COMMON STOCK") set forth in the Certificate (subject to adjustment as provided therein); and (ii) one or more warrants (the "WARRANTS") to purchase in the aggregate the number of shares of Common Stock set forth in the Warrants (subject to adjustment as provided therein), in the form of EXHIBIT 2 attached hereto;

WHEREAS, the Buyer will have registration rights with respect to the shares of Common Stock issuable upon conversion of the Preferred Shares or exercise of the Warrants pursuant to the terms of that certain registration rights agreement to be entered into between the Company and the Buyer as of the date hereof in the form of EXHIBIT 3 hereto ("REGISTRATION RIGHTS AGREEMENT"); and

WHEREAS, the Company and the Buyer are executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by Rule 506 of Regulation D as promulgated by the Securities and Exchange Commission (the "SEC") under the Securities Act of 1933 (the "1933 ACT").

NOW THEREFORE, in consideration of the premises and the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. AGREEMENT TO SUBSCRIBE; PURCHASE PRICE.

(a) SUBSCRIPTION. The Buyer hereby agrees to purchase from the Company, and the Company hereby agrees to sell to the Buyer, the number of Preferred Shares set forth on the signature page of this Agreement at the price per share set forth on the signature page of this Agreement. The shares of Common Stock issuable upon conversion of the Preferred Shares are referred to herein as the "COMMON SHARES." In connection with the purchase of the Preferred Shares by the Buyer, the Company shall issue to the Buyer, at the closing on the Closing Date (as defined herein) the Warrants. The shares of Common Stock issuable upon exercise of the Warrants are referred to herein as the "WARRANT SHARES." The Common Shares and the Warrant Shares are referred to herein collectively as the "UNDERLYING SHARES." The Preferred Shares and the Warrants are referred to herein collectively as the "SECURITIES." The aggregate purchase price for the Preferred Shares and Warrants, which is set forth on the signature page of this Agreement, is referred to herein as the "PURCHASE PRICE."

(b) THE CLOSING.

(i) TIMING. Subject to the fulfillment or waiver of the conditions set forth in Sections 6 and 7 hereof, the purchase and sale of the Preferred Shares and Warrants shall take place at a closing (the "CLOSING") on the date hereof or such other date as the Buyer and the Company may agree upon (the "CLOSING DATE") at the offices of Kleinberg, Kaplan, Wolff & Cohen, P.C.

(ii) FORM AND TIMING OF PAYMENT. The Buyer shall pay the Purchase Price for the Preferred Shares and Warrants by delivering the Purchase Price to the Company on the Closing Date. Upon Closing, the Company shall deliver to the Buyer (or Kleinberg, Kaplan, Wolff & Cohen, P.C. on behalf of the Buyer) (A) one or more certificates representing the aggregate Preferred Shares purchased hereunder by Buyer at the Closing and (B) the Warrants, in each case registered in the corporate securities records of the Company and on the certificates in the name of the Buyer or its nominee.

(c) METHOD OF PAYMENT. Payment of the Purchase Price for the Preferred Shares and the Warrants shall be made in U.S. Dollars by wire transfer of funds to an account designated by the Company.

2. BUYER REPRESENTATIONS, WARRANTIES, ETC.

The Buyer represents and warrants to, and covenants and agrees with, the Company as follows:

(a) ACCREDITED BUYER STATUS; SOPHISTICATED BUYER. The Buyer is an "accredited investor" as that term is defined in Rule 501(a) of Regulation D under the 1933 Act. The Buyer has such knowledge and experience in financial and business matters that it is capable of evaluating the merits and risks of investment in the Securities and the Underlying Shares.

(b) INFORMATION. The Buyer and its advisors, if any, have been furnished with all materials relating to the business, finances and operations of the Company which have been requested and materials relating to the offer and sale of the Securities and the Underlying Shares which have been requested by the Buyer. The Buyer and its advisors, if any, have been afforded the opportunity to ask questions of the Company. Neither such inquiries nor any other due diligence investigations conducted by the Buyer or its advisors, if any, or its representatives shall modify, amend or affect the Buyer's right to rely on the Company's representations and warranties contained in Section 3 below. The Buyer understands that its investment in the Securities and the Underlying Shares involves a high degree of risk. The Buyer has sought such accounting, legal and tax advice as it has considered necessary to make an informed investment decision with respect to its acquisition of the Securities and Underlying Shares.

(c) LEGENDS. The Company shall issue certificates for the Securities and Underlying Shares to the Buyer without any legend except as described herein. The Buyer covenants that, in connection with any transfer of Underlying Shares by the Buyer pursuant to the registration statement contemplated by the Registration Rights Agreement, it will comply with the applicable prospectus delivery requirements of the 1933 Act, provided that copies of a

current prospectus relating to such effective registration statement are or have been supplied to the Buyer.

(d) AUTHORIZATION; ENFORCEMENT. Each of this Agreement and the Registration Rights Agreement has been duly and validly authorized, executed and delivered on behalf of the Buyer and is a valid and binding agreement of the Buyer enforceable against the Buyer in accordance with its terms, subject as to enforceability to general principles of equity and to applicable bankruptcy, insolvency, reorganization, moratorium, liquidation and other similar laws relating to, or affecting generally, the enforcement of applicable creditors' rights and remedies. The Buyer has the requisite corporate power and authority to enter into and perform its obligations under this Agreement and the Registration Rights Agreement and each other agreement entered into by the parties hereto in connection with the transactions contemplated by this Agreement.

(e) NO CONFLICTS. The execution, delivery and performance of this Agreement and the Registration Rights Agreement by the Buyer and the consummation by the Buyer of the transactions contemplated hereby and thereby will not result in a violation of the certificate of incorporation, by-laws or other documents of organization of the Buyer.

(f) INVESTMENT REPRESENTATION. The Buyer is purchasing the Securities for its own account and not with a view to distribution in violation of any securities laws. The Buyer has been advised and understands that neither the Securities nor the Underlying Shares issuable upon conversion or exercise thereof have been registered under the 1933 Act or under the "blue sky" laws of any jurisdiction and may be resold only if registered pursuant to the provisions of the 1933 Act or if an exemption from registration is available, except under circumstances where neither such registration nor such an exemption is required by law. The Buyer has been advised and understands that the Company, in issuing the Securities, is relying upon, among other things, the representations and warranties of the Buyer contained in this Section 3 in concluding that such issuance is a "private offering" and is exempt from the registration provisions of the 1933 Act.

(g) RULE 144. The Buyer understands that there is no public trading market for the Preferred Shares and the Warrants and that none is expected to develop. The Buyer understands that the Securities and the Underlying Shares must be held indefinitely unless and until registered under the 1933 Act or an exemption from registration is available. The Buyer is aware of the provisions of Rule 144 promulgated under the 1933 Act.

(h) RELIANCE BY THE COMPANY. The Buyer understands that the Securities are being offered and sold in reliance on a transactional exemption from the registration requirements of Federal and state securities laws and that the Company is relying upon the truth and accuracy of the representations, warranties, agreements, acknowledgments and understandings of the Buyer set forth herein in order to determine the applicability of such exemptions and the suitability of the Buyer to acquire the Securities.

3. COMPANY REPRESENTATIONS, WARRANTIES, ETC.

The Company represents and warrants to, and covenants and agrees with, the Buyer that, except as set forth in the schedules attached hereto:

(a) ORGANIZATION AND QUALIFICATION; MATERIAL ADVERSE EFFECT. The Company is a corporation duly incorporated and existing in good standing under the laws of the State of Delaware and has the requisite corporate power to own its properties and to carry on its business as now being conducted. The Company does not have any Subsidiary other than StemCells California, Inc. (the "SUBSIDIARY"). The Subsidiary is duly organized, and validly existing and in good standing under the laws of its jurisdiction of formation. Except where specifically indicated to the contrary, all references in this Agreement to Subsidiary shall be deemed to refer to the Subsidiary of the Company. The Company is duly qualified as a foreign corporation to do business and is in good standing in every jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary other than those in which the failure so to qualify would not have a Material Adverse Effect. "MATERIAL ADVERSE EFFECT" means any adverse effect on the business, operations, properties, prospects or financial condition of the Company and its Subsidiary, which is (either alone or together with all other adverse effects) material to the Company and its Subsidiary, taken as a whole, and any material adverse effect on the transactions contemplated under this Agreement, the Certificate, the Warrants and the Registration Rights Agreement, or any other agreement or document contemplated hereby or thereby.

(b) AUTHORIZATION; ENFORCEMENT. (i) The Company has all requisite corporate power and authority to enter into and perform this Agreement, the Certificate, the Registration Rights Agreement and the Warrants (as they may be amended from time to time, the "TRANSACTION DOCUMENTS") and to issue the Preferred Shares and the Warrants in accordance with the terms hereof, (ii) the execution and delivery of this Agreement, the Registration Rights Agreement, and the Warrants by the Company and the consummation by it of the transactions contemplated hereby and thereby, including the issuance of the Securities, have been duly authorized by all necessary corporate action, and no further consent or authorization of the Company or its Board of Directors (or any committee or subcommittee thereof) or stockholders is required, (iii) this Agreement, the Certificate, the Registration Rights Agreement, and the Warrants have been duly executed and delivered by the Company, (iv) this Agreement, the Certificate, the Registration Rights Agreement, and the Warrants constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms, except (A) as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally the enforcement of creditors' rights and remedies or by other equitable principles of general application, and (B) to the extent the indemnification provisions contained in this Agreement and the Registration Rights Agreement may be limited by applicable federal or state securities laws and (v) the Securities and the Underlying Shares issuable upon the conversion or exercise thereof have been duly authorized and, upon issuance thereof and payment therefor in accordance with the terms of this Agreement, the Securities and the Underlying Shares will be validly issued, fully paid and non-assessable, free and clear of any and all liens, claims and encumbrances.

(c) CAPITALIZATION. As of the date hereof, following the acceptance of the Certificate by the Secretary of State of Delaware, the authorized capital stock of the Company consists of (i) 45,000,000 shares of Common Stock, of which 23,455,137 shares were issued and outstanding, and, 6,700,000 shares are issuable and reserved for issuance pursuant to the Company's stock option and purchase plans and committed pursuant to pending acquisitions, and, approximately 938,530 shares are issuable pursuant to securities (other than options and purchase plans referred to above) exercisable or exchangeable for, or convertible into, shares of Common Stock, and approximately 1,800,000 shares are reserved for issuance pursuant to such securities; and (ii) 1,000,000 shares of preferred stock, of which, as of the date hereof, (A) 2,626 shares are currently designated as 6% Cumulative Convertible Preferred Stock, 1,500 shares of which are issued and outstanding, (B) 450,000 shares are designated as Junior Preferred Shares, none of which are issued or outstanding and (C) 5,000 Preferred Shares, all of which are to be issued pursuant to this Agreement. All of such outstanding shares have been, or upon issuance will be, validly issued, fully paid and nonassessable. As of the date hereof, except as disclosed in SCHEDULE 3(c), (i) no shares of the Company's capital stock are subject to preemptive rights or any other similar rights or any liens or encumbrances suffered or permitted by the Company, (ii) there are no outstanding debt securities, (iii) there are no outstanding options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or its Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or its Subsidiary is or may become bound to issue additional shares of capital stock of the Company or its Subsidiary or options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or its Subsidiary, (iv) there are no agreements or arrangements under which the Company or its Subsidiary is obligated to register the sale of any of their securities under the 1933 Act (except as set forth on SCHEDULE 3(c)), (v) there are no outstanding securities of the Company or its Subsidiary which contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or its Subsidiary is or may become bound to redeem a security of the Company or its Subsidiary, (vi) there are no securities or instruments containing anti-dilution or similar provisions that will be triggered by the issuance of any Securities or any Underlying Shares and (vii) the Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. The Company has furnished to the Buyer true and correct copies of the Company's Certificate of Incorporation, as amended and as in effect on the date hereof (the "CERTIFICATE OF INCORPORATION"), and the Company's By-laws, as in effect on the date hereof (the "BY-LAWS").

(d) NO CONFLICTS. The execution, delivery and performance of the Transaction Documents by the Company and the consummation by the Company of the transactions contemplated hereby and thereby and the issuance of the Preferred Shares, the Warrants, and the Underlying Shares will not (i) result in a violation of the Certificate of Incorporation, any certificate of designations, preferences and rights of any outstanding series of preferred stock of the Company or the By-laws; (ii) conflict with, or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of, any agreement, indenture or instrument to which the Company or its Subsidiary is a party, or (iii) result in a violation of any law, rule, regulation, order, judgment or decree (including United States federal and state securities laws

and regulations and the rules and regulations of the Principal Market (as defined in the last sentence of this paragraph) applicable to the Company or its Subsidiary or by which any property or asset of the Company or its Subsidiary is bound or affected. Neither the Company nor its Subsidiary is in violation of any term of, or in default under, (x) its certificate of incorporation, any certificate of designations, preferences and rights of any outstanding series of preferred stock or By-laws or its organizational charter or by-laws, respectively, (y) any material contract, agreement, mortgage, indebtedness, indenture, instrument, or (z) any judgment, decree or order or any statute, rule or regulation applicable to the Company or its Subsidiary, the non-compliance with which (in the cases of (y) and (z)) would cause a Material Adverse Effect. Except as specifically contemplated by this Agreement and as required under the 1933 Act or state "blue sky" laws, the Company is not required to obtain any consent, authorization or order of, or make any filing or registration with, any court, governmental agency or any regulatory or self-regulatory agency in order for it to execute, deliver or perform any of its obligations under, or contemplated by, the Transaction Documents or the issuance of the Securities in accordance with the terms hereof or thereof. All consents, authorizations, orders, filings and registrations which the Company is required to obtain pursuant to the preceding sentence have been obtained or effected on or prior to the date hereof, or in the case of post-sale filings, will be made promptly after the date hereof. The Company complies with and is not in violation of the listing requirements of the Principal Market as in effect on the date hereof in all material respects and on the Closing Date and is not aware of any existing facts which provide a basis for delisting or suspension of the Common Stock by the Principal Market. "PRINCIPAL MARKET" shall mean the Nasdaq National Market System or, if the Common Stock ceases to be traded on the Nasdaq National Market System, such other market on which the Common Stock is then principally listed or quoted.

(e) SEC DOCUMENTS; FINANCIAL STATEMENTS. Since December 31, 1998, the Company has filed all reports, schedules, forms, statements and other documents required to be filed by it with the SEC pursuant to the reporting requirements of the Securities Exchange Act of 1934, as amended (the "1934 ACT") (all of the foregoing filed prior to the date hereof and all exhibits included therein and financial statements and schedules thereto and documents incorporated by reference therein being hereinafter referred to as the "SEC DOCUMENTS"). As of their respective dates, the SEC Documents complied in all material respects with the requirements of the 1934 Act and the rules and regulations of the SEC promulgated thereunder applicable to the SEC Documents, and none of the SEC Documents, at the time they were filed with the SEC, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. As of their respective dates, the financial statements of the Company included in the SEC Documents complied as to form in all material respects with applicable accounting requirements and the published rules and regulations of the SEC with respect thereto. Such financial statements have been prepared in accordance with generally accepted accounting principles, consistently applied, during the periods involved (except (i) as may be otherwise indicated in such financial statements or the notes thereto, or (ii) in the case of unaudited interim statements, to the extent they may exclude footnotes or may be condensed or summary statements) and fairly present in all material respects the financial position of the Company as of the dates thereof and the results of its operations and cash flows for the periods then ended (subject, in the case of unaudited statements, to normal year-end audit adjustments). Neither the Company nor its Subsidiary or any of their officers,

directors, employees or agents have provided the Buyer with any material, nonpublic information which was not publicly disclosed prior to the date hereof.

(f) ABSENCE OF CERTAIN CHANGES. Except as set forth in the SEC Documents, since December 31, 1998 there has been no adverse change or adverse development in the business, properties, assets, operations, financial condition, prospects, liabilities or results of operations of the Company or its Subsidiary which has had or, to the knowledge of the Company or its Subsidiary, is reasonably likely to have a Material Adverse Effect. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to any bankruptcy law nor does the Company or its Subsidiary have any knowledge or reason to believe that its creditors intend to initiate involuntary bankruptcy proceedings.

(g) ABSENCE OF LITIGATION. There is no action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body pending or, to the knowledge of the Company or its Subsidiary, threatened against or affecting the Company, the Common Stock or any of the Company's Subsidiary or any of the Company's or the Company's Subsidiary's officers or directors in their capacities as such, which individually and in the aggregate, respectively, would be reasonably likely to result in liability to the Company in excess of \$50,000 and \$100,000, respectively.

(h) ACKNOWLEDGMENT REGARDING BUYER'S PURCHASE OF SHARES. The Company acknowledges and agrees that the Buyer is acting solely in the capacity of arm's length purchaser with respect to the Transaction Documents and the transactions contemplated hereby and thereby. The Company further acknowledges that the Buyer is not acting as financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated hereby and thereby, and any advice given by the Buyer or any of its respective representatives or agents in connection with the Transaction Documents and the transactions contemplated hereby and thereby is merely incidental to the Buyer's purchase of the Securities. The Company further represents to the Buyer that the Company's decision to enter into the Transaction Documents has been based solely on the independent evaluation by the Company and its representatives.

(i) NO UNDISCLOSED EVENTS, LIABILITIES, DEVELOPMENTS OR CIRCUMSTANCES. No event, liability, development or circumstance has occurred or exists with respect to the Company or its Subsidiary or their respective business, properties, prospects, operations or financial condition, that would be required to be disclosed by the Company under applicable securities laws in a registration statement filed with the SEC relating to an issuance and sale by the Company of its Common Stock and which has not been publicly disclosed.

(j) NO INSIDE INFORMATION. The Company has not provided and, the Company shall not provide, the Buyer with any non-public information, except to the extent that the Buyer exercises its right to review a registration statement containing material non-public information (after receiving written notice of the existence of such content) in writing or otherwise expressly consents in writing to the receipt of non-public information (in any case subject to Section 4(k) hereof).

(k) NO SECURITIES ACT REGISTRATION. The sale and issuance of the Preferred Shares and Warrants in accordance with terms of this Agreement and the issuance of the Underlying Shares upon the conversion and/or exercise of the Securities are exempt from registration under the 1933 Act.

(l) EMPLOYEE RELATIONS. Neither the Company nor its Subsidiary is involved in any labor dispute nor, to the knowledge of the Company or its Subsidiary, is any such dispute threatened, the effect of which would be reasonably likely to result in a Material Adverse Effect. Neither the Company nor its Subsidiary is a party to a collective bargaining agreement. The Company and its Subsidiary believe that relations between the Company and its Subsidiary and their respective employees are good. No executive officer (as defined in Rule 501(f) of the 1933 Act) whose departure would be adverse to the Company has notified the Company that such officer intends to leave the Company or otherwise terminate such officer's employment with the Company.

(m) INTELLECTUAL PROPERTY RIGHTS. The Company and its Subsidiary own or possess adequate rights or licenses to use all trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets and rights necessary to conduct their respective businesses as now conducted. None of the Company's trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, government authorizations, trade secrets or other intellectual property rights have expired or terminated, or are expected to expire or terminate within two (2) years from the date of this Agreement except as would not have a Material Adverse Effect. The Company and its Subsidiary do not have any knowledge of any infringement by the Company or its Subsidiary of trademark, trade name rights, patents, patent rights, copyrights, inventions, licenses, service names, service marks, service mark registrations, trade secret or other similar rights of others, or of any such development of similar or identical trade secrets or technical information by others, and no claim, action or proceeding has been made or brought against, or to the Company's knowledge, is threatened against, the Company or its Subsidiary regarding trademarks, trade name rights, patents, patent rights, inventions, copyrights, licenses, service names, service marks, service mark registrations, trade secrets or other infringement. The Company and its Subsidiary have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties.

(n) INTENTIONALLY OMITTED.

(o) ENVIRONMENTAL LAWS. The Company and its Subsidiary (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants ("ENVIRONMENTAL LAWS"), (ii) have received all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) are in compliance with all terms and conditions of any such permit, license or approval where such noncompliance or failure to receive permits, licenses or approvals referred to in clauses (i), (ii) or (iii) above could have, individually or in the aggregate, a Material Adverse Effect.

(p) TITLE. The Company and its Subsidiary have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by them which is material to the business of the Company and its Subsidiary, in each case free and clear of all liens, encumbrances and defects except such as are described in SCHEDULE 3(P) or in the SEC Documents or such as do not materially and adversely affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company or its Subsidiary. Any real property and facilities held under lease by the Company or its Subsidiary are held by them under valid, subsisting and enforceable leases with such exceptions as are not material and do not interfere with the use made and proposed to be made of such property and buildings by the Company and its Subsidiary.

(q) INSURANCE. The Company and its Subsidiary are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as management of the Company believes to be prudent and customary in the businesses in which the Company and its Subsidiary are engaged. Neither the Company nor any such Subsidiary has been refused any insurance coverage sought or applied for and neither the Company nor any such Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not materially and adversely affect the condition, financial or otherwise, or the earnings, business or operations of the Company and its Subsidiary taken as a whole.

(r) REGULATORY PERMITS. The Company and its Subsidiary possess all material certificates, authorizations and permits issued by the appropriate federal, state or foreign regulatory authorities, necessary to conduct their respective businesses, and neither the Company nor any such Subsidiary has received any notice of proceedings relating to the revocation or modification of any such certificates, authorization or permit.

(s) INTERNAL ACCOUNTING CONTROLS. The Company and its Subsidiary maintain a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(t) FOREIGN CORRUPT PRACTICES ACT. Neither the Company, nor any director, officer, agent, employee or other person acting on behalf of the Company or any Subsidiary has, in the course of acting for, or on behalf of, the Company, directly or indirectly used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expenses relating to political activity; directly or indirectly made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended, or any similar treaties of the United States; or directly or indirectly made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment to any foreign or domestic government or party official or employee.

(u) TAX STATUS. The Company and its Subsidiary has made or filed all United States federal and state income and all other tax returns, reports and declarations required by any jurisdiction to which it is subject and (i) has paid all taxes and other governmental assessments and charges, shown or determined to be due on such returns, reports and declarations, except those being contested in good faith and (ii) has set aside on its books provisions reasonably adequate for the payment of all taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes claimed to be due by the taxing authority of any jurisdiction, and the Company is not aware of any basis for any such claim.

(v) CERTAIN TRANSACTIONS. Except as set forth in the SEC Documents filed on EDGAR at least thirty (30) Trading Days prior to the date hereof and except for arm's length transactions pursuant to which the Company makes payments in the ordinary course of business upon terms no less favorable than the Company could obtain from third parties and other than the grant of stock options disclosed on SCHEDULE 3(c), none of the officers, directors or employees of the Company is presently a party to any transaction with the Company or its Subsidiary (other than for services as employees, consultants, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any corporation, partnership, trust or other entity in which any officer, director or any such employee has a substantial interest or is an officer, director, trustee or partner.

(w) DILUTIVE EFFECT. The Company understands and acknowledges that the number of Underlying Shares issuable upon conversion or exercise of the Securities will increase in certain circumstances. The Company further acknowledges that, subject to such limitations as are expressly set forth in the Transaction Documents, its obligation to issue the Underlying Shares upon conversion or exercise of the Securities is absolute and unconditional regardless of the dilutive effect that such issuance may have on the ownership interests of other shareholders of the Company.

(x) APPLICATION OF TAKEOVER PROTECTIONS. There are no anti-takeover provisions contained in the Company's Certificate of Incorporation or otherwise which will be triggered as a result of the transactions contemplated by this Agreement, including, without limitation, the Company's issuance of the Securities or Underlying Shares and the Buyer's ownership of the Securities or Underlying Shares.

(y) RIGHTS PLAN. The Company confirms that no provision of the Company's rights plan will, under any present or future circumstances, delay, prevent or interfere with the performance of any of the Company's obligations under the Transaction Documents and such plan will not be "triggered" by such performance.

(z) OBLIGATIONS ABSOLUTE. Each of the Company and the Buyer agrees that, subject only to the conditions, qualifications and exceptions (if any) specifically set forth in the Transaction Documents, its obligations under the Transaction Documents are unconditional and absolute. Except to the extent (if any) specifically set forth in the Transaction Documents, each party's obligations thereunder are not subject to any right of set off, counterclaim, delay or reduction.

(aa) ISSUANCE OF UNDERLYING SHARES. The Underlying Shares are duly authorized and reserved for issuance and, upon exercise or conversion of the Warrants or Preferred Shares, respectively, in accordance with the terms thereof, such Underlying Shares will be validly issued, fully paid and non-assessable, free and clear of any and all liens, claims and encumbrances, and entitled to be traded on the Nasdaq National Market System, the New York Stock Exchange, the American Stock Exchange or the Nasdaq Small-Cap Market (collectively, the "APPROVED Markets"), and the holders of such Underlying Shares shall be entitled to all rights and preferences accorded to a holder of Common Stock. As of the date of this Agreement, the outstanding shares of Common Stock are currently listed on the Nasdaq National Market System.

(bb) BROKERS. Other than the Company's engagement of Cantor Fitzgerald & Co., the Company has taken no action which would give rise to any claim by any person for brokerage commissions, finder's fees or similar payments by the Buyer relating to this Agreement or the transactions contemplated hereby. The Company shall be responsible for any and all payments to Cantor Fitzgerald & Co. related to such engagement.

4. CERTAIN COVENANTS AND ACKNOWLEDGMENTS.

(a) TRANSFER RESTRICTIONS.

The Company and the Buyer acknowledge and agree that (i) the Securities have not been and are not being registered under the provisions of the 1933 Act and, except as provided in the Registration Rights Agreement with respect to the resale of the Underlying Shares, the Underlying Shares have not been and are not being registered for resale under the 1933 Act, and the Securities may not be transferred unless (A) subsequently registered for resale thereunder or (B) the Buyer shall have delivered to the Company an opinion of counsel, reasonably satisfactory in form, scope and substance to the Company, to the effect that the Securities and/or Underlying Shares to be sold or transferred may be sold or transferred pursuant to an exemption from such registration (unless waived) and (ii) any resale of the Securities and/or Underlying Shares made in reliance on Rule 144 promulgated under the 1933 Act ("RULE 144") may be made only in accordance with the terms of Rule 144 and further, if Rule 144 is not applicable, any such resale of Securities and/or Underlying Shares under circumstances in which the seller, or the person through whom the sale is made, may be deemed to be an underwriter, as that term is used in the 1933 Act, may require compliance with some other exemption under the 1933 Act or the rules and regulations of the SEC thereunder.

(b) RESTRICTIVE LEGEND.

(i) The Buyer acknowledges and agrees that the Preferred Shares and Warrants shall bear a restrictive legend in substantially the following form:

The securities represented by this certificate have not been registered under the Securities Act of 1933, as amended. The securities may not be resold, transferred or assigned in the absence of an effective registration statement for the securities under the Securities Act of 1933, as amended, or an opinion of counsel that registration is not required under said Act.

(ii) The Buyer further acknowledges and agrees that until such time as the Underlying Shares have been registered for resale under the 1933 Act as contemplated by the Registration Rights Agreement, the certificates for the Underlying Shares may bear a restrictive legend in substantially the following form:

The securities represented by this certificate have not been registered under the Securities Act of 1933, as amended. The securities may not be resold, transferred or assigned in the absence of an effective registration statement for the securities under the Securities Act of 1933, as amended, or an opinion of counsel that registration is not required under said Act.

(iii) Once the Registration Statement required to be filed by the Company pursuant to Section 2 of the Registration Rights Agreement has been declared effective or once the Underlying Shares may be sold pursuant to Rule 144, thereafter (A) upon request of the Buyer the Company will substitute certificates without restrictive legend for certificates for all Underlying Shares which bear such restrictive legend and remove any stop-transfer restriction relating thereto promptly, but in no event later than three Trading Days (as defined herein) after surrender of such certificates by the Buyer and (B) the Company shall not place any restrictive legend on certificates for Underlying Shares or impose any stop-transfer restriction thereon. As used in this Agreement, "TRADING DAY" means a day on which the Principal Market is open for general trading.

(c) REGISTRATION RIGHTS AGREEMENT.

The parties hereto agree to enter into the Registration Rights Agreement in the form attached hereto as EXHIBIT 3 on or before the Closing Date.

(d) FORM D.

The Company agrees to file a Form D with respect to the Securities as required under Regulation D and to provide a copy thereof to the Buyer promptly after such filing. The Buyer agrees to cooperate with the Company in connection with such filing and, upon request of the Company, to provide all information relating to the Buyer reasonably required for such filing.

(e) AUTHORIZATION FOR TRADING; REPORTING STATUS.

On or before the Closing Date, the Company shall, if required, file a notification for listing of additional shares with the Nasdaq relating to the Underlying Shares and shall provide evidence of such filing to the Buyer. So long as the Buyer beneficially owns any of the Securities or Underlying Shares, the Company covenants to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to Section 13(a) or 15(d) of the Exchange Act; provided, however, that if the Company is not required to file reports pursuant to such sections, it will prepare and furnish to the Buyer and make publicly available in accordance with Rule 144(c) promulgated under the Securities Act such information as is required for the Buyer to sell the Securities under Rule 144 promulgated under the Securities Act.

(f) BLUE SKY LAWS.

The Company shall take such action as shall be necessary to qualify, or to obtain an exemption for, the Preferred Shares for sale to the Buyer and the Warrants for issuance to the Buyer pursuant to this Agreement and the Underlying Shares for issuance to the Buyer upon conversion of the Preferred Shares or exercise of the Warrants under such of the securities or "blue sky" laws of jurisdictions as shall be applicable to the sale of the Preferred Shares and the issuance of the Warrants pursuant to this Agreement and the issuance to the Buyer of the Underlying Shares pursuant to the terms of the Securities. The Company shall furnish copies of all filings, applications, orders and grants or confirmations of exemptions relating to such securities or "blue sky" laws.

(g) EXPENSES.

The parties shall each bear their own expenses in connection with this Agreement, the other Transaction Documents and the transactions contemplated hereby and thereby. In addition, the Company or the Buyer, as the case may be, shall pay on demand all expenses incurred by the other party, including reasonable attorneys' fees and expenses, as a consequence of, or in connection with any default or breach of any of the defaulting or breaching party's obligations set forth in any of such agreements or instruments and the enforcement of any right of, including the collection of any payments due, the other party under any of such agreements or instruments, including any action or proceeding relating to such enforcement, or any order, injunction or other process seeking to restrain a party from paying any amount due the other party, in which the other party prevails, provided that, where the amount is quantifiable, such reimbursable legal fees and expenses do not exceed, in each instance, 35% of the amount sought in good faith to be recovered.

(h) CERTAIN ISSUANCES OF SECURITIES.

Unless the Company obtains (x) the approval of its stockholders as required by Rule 4350(i)(1)(D) of Nasdaq as in effect from time to time or any successor, replacement or similar provision thereof or of any other market on which the Common Stock is listed for trading (the "SHAREHOLDER APPROVAL RULE") or (y) a waiver thereof from Nasdaq, the Company will not issue any shares of Common Stock or shares of any series of preferred stock or other securities convertible into, exchangeable for, or otherwise entitling the holder to acquire, shares of Common Stock which would be subject to the requirements of the Shareholder Approval Rule and which would be integrated with the sale of the Preferred Shares and issuance of the Warrants to the Buyer or the issuance of the Underlying Shares for purposes of the Shareholder Approval Rule.

(i) COMMERCIALY REASONABLE EFFORTS. Each of the parties shall use commercially reasonable efforts timely to satisfy each of the conditions to the other party's obligations to sell and purchase the Preferred Shares set forth in Section 6 or 7, as the case may be, of this Agreement on or before the Closing Date.

(j) INTENTIONALLY OMITTED.

(k) NON-PUBLIC INFORMATION. Notwithstanding anything to the contrary in any Transaction Document or any other agreement between the Buyer and the Company, the Company shall not be required to provide any non-public information regarding the Company to the Buyer except to the extent that the disclosure of such additional information to the Buyer is consistent with Regulation FD under the Securities Act.

(l) PRESS RELEASE. Immediately following the Closing Date, the Company shall issue a press release in the form set forth in EXHIBIT 5 hereto. Buyer shall have the opportunity to review such press release prior to its issuance. No press release shall name the Buyer except as shall be required by law or permitted by Buyer. If the Company fails to issue a press release within 1 business day of the Closing Date, the Buyer may issue a press release covering the Transaction Documents and complying with any legal requirement applicable to the Buyer and the Company.

5. CLOSING DATE.

Subject to the satisfaction or waiver of the conditions set forth in Sections 6 and 7 below, the date and time of the issuance and sale of the Preferred Shares and the issuance of the Warrants shall be 4:00 p.m., New York City time, on the Closing Date.

6. CONDITIONS TO THE COMPANY'S OBLIGATION TO SELL AND ISSUE.

The Buyer understands that the Company's obligation to sell the Preferred Shares and issue the Warrants to the Buyer pursuant to this Agreement is conditioned upon the satisfaction of the following conditions precedent on or before the Closing Date (any or all of which may be waived by the Company in its sole discretion):

(a) The receipt by the Company of the Buyer's executed signature page to this Agreement and the Registration Rights Agreement;

(b) Delivery by the Buyer to the Company of good funds for payment of 100% of the Purchase Price for the Securities in accordance with Section 1 hereof; and

(c) The accuracy in all material respects on the Closing Date of the representations and warranties of the Buyer contained in this Agreement as if made on the Closing Date and the performance by the Buyer on or before the Closing Date of all covenants and agreements of the Buyer required to be performed on or before the Closing Date, and receipt by the Company of a certificate, dated the Closing Date, of a duly authorized signatory of the Buyer confirming such matters and such other matters as the Company may reasonably request.

7. CONDITIONS TO THE BUYER'S OBLIGATION TO PURCHASE.

The Company understands that the Buyer's obligation to purchase the Preferred Shares and acquire the Warrants on the Closing Date is conditioned upon the satisfaction of the following conditions precedent on or before the Closing Date (any or all of which may be waived by the Buyer in its sole discretion):

(a) The receipt by the Buyer of the Company's executed signature page to this Agreement and the Registration Rights Agreement;

(b) The delivery by the Company to the Buyer (or its counsel) of the Preferred Shares and the Warrants in accordance with this Agreement;

(c) The accuracy in all material respects on the Closing Date of the representations and warranties of the Company contained in this Agreement as if made on the Closing Date and the performance by the Company on or before the Closing Date of all covenants and agreements of the Company required to be performed on or before the Closing Date, and receipt by the Buyer of a certificate, dated the Closing Date, of the Chief Executive Officer of the Company confirming such matters and such other matters as the Buyer may reasonably request;

(d) The receipt by the Buyer of a certificate, dated the Closing Date, of the Secretary of the Company certifying (i) the Certificate of Incorporation, as amended, and By-Laws of the Company as in effect on the Closing Date and (ii) all resolutions of the Board of Directors (and committees thereof) of the Company relating to this Agreement and the transactions contemplated hereby;

(e) The receipt by the Buyer on the Closing Date of an opinion of Ropes & Gray, dated the Closing Date, in such form, scope and substance reasonably satisfactory to the Buyer, to the effect set forth in EXHIBIT 4 attached hereto.

(f) From the date hereof to the Closing Date, trading in the Company's Common Stock shall not have been suspended by the SEC and trading in securities generally as reported by Nasdaq shall not have been suspended or limited, and the Common Stock shall be listed on Nasdaq.

(g) No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction which prohibits the consummation of any of the transactions contemplated by any Transaction Document. The NASD shall not have objected or indicated that it may object to the consummation of any of the transactions contemplated by this Agreement.

(h) Evidence of the acceptance of the Certificate by the Secretary of the State of Delaware.

(i) The Company shall have delivered to the Buyer such other documents relating to the transactions contemplated by this Agreement as the Buyer or its counsel may reasonably request.

8. MISCELLANEOUS.

(a) Governing Law. The corporate laws of the State of Delaware shall govern all issues concerning the relative rights of the Company and its stockholders. All other questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be

governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law.

(b) COUNTERPARTS. This Agreement may be executed in counterparts and by the parties hereto on separate counterparts, all of which together shall constitute one and the same instrument. A facsimile transmission of this Agreement bearing a signature on behalf of a party hereto shall be legal and binding on such party.

(c) HEADINGS, ETC. The headings, captions and footers of this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement.

(d) SEVERABILITY. If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement or the validity or enforceability of this Agreement in any other jurisdiction.

(e) AMENDMENTS. No amendment, modification, waiver, discharge or termination of any provision of this Agreement nor consent to any departure by the Buyer or the Company therefrom shall in any event be effective unless the same shall be in writing and signed by the party to be charged with enforcement, and then shall be effective only in the specific instance and for the purpose for which given. No course of dealing between the parties hereto shall operate as an amendment of this Agreement.

(f) WAIVERS. Failure of any party to exercise any right or remedy under this Agreement or otherwise, or delay by a party in exercising such right or remedy, or any course of dealings between the parties, shall not operate as a waiver thereof or an amendment hereof, nor shall any single or partial exercise of any such right or power, or any abandonment or discontinuance of steps to enforce such a right or power, preclude any other or further exercise thereof or exercise of any other right or power.

(g) NOTICES. Any notices required or permitted to be given under the terms of this Agreement shall be delivered personally (which shall include telephone line facsimile transmission with answer back confirmation) or by courier and shall be effective upon receipt, in the case of the Company addressed to the Company at its address shown in the introductory paragraph of this Agreement, Attention: Chief Executive Officer (telephone line facsimile

transmission number (650) 475-3101, with a copy to Ropes & Gray, One International Place, Boston, Massachusetts, 02110, Attention: Geoffrey B. Davis, Esq., (facsimile number (617) 951-7050), or, in the case of the Buyer, at its address or telephone line facsimile transmission number shown on the signature page of this Agreement, with a copy to Kleinberg, Kaplan, Wolff & Cohen, P.C., 551 Fifth Avenue, New York, New York 10176, Attn: Stephen M. Schultz, Esq. (facsimile number: (212) 986-8866) or such other address or telephone line facsimile transmission number as a party shall have provided by notice to the other party in accordance with this provision.

(h) ASSIGNMENT. Prior to the Closing Date, the Buyer may not assign its rights and obligations under this Agreement. Any transfer of the Securities or Underlying Shares by the Buyer after the Closing Date shall be made in accordance with Section 4. After the Closing Date, the Buyer shall have the right to assign its rights and obligations under this Agreement in connection with any transfer of the Securities and Underlying Shares upon execution by any transferee of an instrument reasonably satisfactory to the Company pursuant to which the transferee agrees with the Company to be bound as a Buyer by the terms and conditions of this Agreement.

(i) SURVIVAL OF REPRESENTATIONS AND WARRANTIES. The respective representations, warranties, covenants and agreements of the Buyer and the Company contained in this Agreement or made by or on behalf of them, respectively, pursuant to this Agreement shall survive the delivery of and payment for the Preferred Shares and shall remain in full force and effect regardless of any investigation made by or on behalf of them or any person controlling or advising any of them.

(j) ENTIRE AGREEMENT. This Agreement and its Schedules and Exhibits, the Transaction Documents and the transactions contemplated hereby and thereby set forth the entire agreement between the parties hereto with respect to the subject matter hereof.

(k) FURTHER ASSURANCES. Each party to this Agreement will perform any and all acts and execute any and all documents as may be necessary and proper under the circumstances in order to accomplish the intents and purposes of this Agreement and to carry out its provisions.

(l) PUBLIC STATEMENTS, PRESS RELEASES, ETC. The Company and the Buyer shall have the right to approve before issuance any press releases or any other public statements with respect to the transactions contemplated hereby; PROVIDED, HOWEVER, that the Company shall be entitled, without the prior approval of the Buyer, to make any press release or other public disclosure with respect to such transactions as is required by applicable law or Nasdaq regulation (although the Buyer shall be consulted by the Company in connection with any such press release or other public disclosure prior to its release and shall be provided with a copy thereof).

(m) CONSTRUCTION. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

(n) INDEMNIFICATION. In consideration of the Buyer's execution and delivery of this Agreement, the Registration Rights Agreement and acquiring the Preferred Shares hereunder

and in addition to all of the Company's other obligations under this Agreement or the transaction documents contemplated hereby, the Company shall defend, protect, indemnify and hold harmless the Buyer and all of its partners, officers, directors, employees, members and direct or indirect investors and any of the foregoing person's agents or other representatives (including, without limitation, those retained in connection with the transactions contemplated by this Agreement) (collectively, the "INDEMNITEES") from and against any and all actions, causes of action, suits, claims, losses, costs, penalties, fees, liabilities and damages, and expenses in connection therewith (irrespective of whether any such Indemnitee is a party to the action for which indemnification hereunder is sought), and including reasonable attorneys' fees and disbursements (the "INDEMNIFIED LIABILITIES"), incurred by any Indemnitee as a result of, or arising out of, or relating to (i) any misrepresentation or breach of any representation or warranty made by the Company in this Agreement or the other transaction documents contemplated hereby or any other certificate or document contemplated hereby or thereby, (ii) any breach of any covenant, agreement or obligation of the Company contained in this Agreement or the other transaction documents contemplated herein or any other certificate or document contemplated hereby or thereby, (iii) any cause of action, suit or claim brought or made against such Indemnitee by a third party and arising out of or resulting from (A) the execution, delivery, performance, breach by the Company or enforcement of this Agreement or the other transaction documents contemplated hereby or any other certificate, instrument or document contemplated hereby or thereby, (B) any transaction financed or to be financed in whole or in part, directly or indirectly, with the proceeds of the issuance of the Underlying Shares or (C) the status of the Buyer or holder of the Securities or Underlying Shares as an investor in the Company and (iv) the enforcement of this Section. Notwithstanding the foregoing, Indemnified Liabilities shall not include any liability of any Indemnitee arising solely out of such Indemnitee's gross negligence, willful misconduct or fraudulent action(s). To the extent that the foregoing undertaking by the Company may be unenforceable for any reason, the Company shall make the maximum contribution to the payment and satisfaction of each of the Indemnified Liabilities which is permissible under applicable law. Except as otherwise set forth herein, the mechanics and procedures with respect to the rights and obligations under this section shall be the same as those set forth in the Registration Rights Agreement, including, without limitation, those procedures with respect to the settlement of claims and Company's right to assume the defense of claims.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, this Agreement has been duly executed by the Buyer and the Company by their respective officers or other representatives thereunto duly authorized on the respective dates set forth below.

NUMBER OF PREFERRED SHARES: 5,000

PRICE PER SHARE: \$1,000.00

NUMBER OF WARRANT SHARES: 350,877

AGGREGATE PURCHASE PRICE: \$5,000,000.00

WARRANT EXERCISE PRICE: \$3.42

RIVERVIEW GROUP, L.L.C.

By: /s/ Terry Feeney

Name: Terry Feeney
Title: Chief Operating Officer

Address: 666 Fifth Avenue
New York, New York 10103
Facsimile: (212) 841-6302

STEMCELLS, INC.

By: /s/ Martin McGlynn

Name: Martin McGlynn
Title: President and CEO

SCHEDULES

Disclosure Schedule

EXHIBITS

| | |
|-----------|--|
| Exhibit 1 | Form of Certificate |
| Exhibit 2 | Form of Warrants |
| Exhibit 3 | Form of Registration Rights Agreement |
| Exhibit 4 | Form of Opinion of Counsel to Be Delivered on Closing Date |
| Exhibit 5 | Form of Press Release |

REGISTRATION RIGHTS AGREEMENT

THIS REGISTRATION RIGHTS AGREEMENT, dated as of December 4, 2001, (this "AGREEMENT") is made by and between STEMCELLS, INC., a Delaware corporation (the "COMPANY"), and the entity named on the signature page hereto (the "INITIAL PURCHASER").

W I T N E S S E T H:

WHEREAS, the Initial Purchaser and the Company are parties to that certain subscription agreement ("SUBSCRIPTION AGREEMENT") dated the date hereof, pursuant to which the Company, among other things, issued (a) shares of the Company's 3% Cumulative Convertible Preferred Stock (the "PREFERRED SHARES") which shall be convertible into shares of the Company's common stock ("COMMON STOCK"), par value \$.01 per share (such shares are hereinafter referred to as "COMMON SHARES") pursuant to the certificate of designations ("CERTIFICATE") related thereto and (b) warrants ("WARRANTS" and, together with the Preferred Shares, the "SECURITIES") to purchase shares of Common Stock ("WARRANT SHARES") in accordance with the Warrants; and

WHEREAS, to induce the Initial Purchaser to execute and deliver the Subscription Agreement, the Company has agreed to provide certain registration rights under the Securities Act of 1933, as amended, and the rules and regulations thereunder, or any similar successor statute (collectively, the "1933 Act"), and applicable state securities laws with respect to the Common Shares and the Warrant Shares;

NOW, THEREFORE, in consideration of the premises and the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the Initial Purchaser hereby agree as follows:

1. DEFINITIONS.

(a) As used in this Agreement, the following terms shall have the following meanings:

"1934 ACT" means the Securities Exchange Act of 1934, as amended.

"PURCHASER" or "PURCHASERS" means the Initial Purchaser and any Permitted Transferee who agrees to become bound by the provisions of this Agreement, or a similar agreement relating to Common Shares or Warrant Shares, in accordance with Section 9 hereof.

"MAJORITY HOLDERS" means those Purchasers who hold a majority in interest of the Securities and the Registrable Securities.

"PERMITTED TRANSFEREE" means any person (1) who is an "accredited investor" as defined in Regulation D under the 1933 Act, and (2) who, immediately following the assignment of rights under this Agreement holds (x) at least 50,000 shares of Common Stock, (y) Warrants which at the time of such transfer are exercisable for at least 50,000 shares of Common Stock, or

(z) Preferred Shares which at the time of such transfer are convertible into at least 50,000 shares of Common Stock, or any combination thereof (the 50,000 share amounts referred to in this definition being subject to equitable adjustment from time to time on terms reasonably acceptable to the Majority Holders for (i) stock splits, (ii) stock dividends, (iii) combinations, (iv) capital reorganizations, (v) issuance to all holders of Common Stock of rights or warrants to purchase shares of Common Stock and (vi) similar events relating to the Common Stock, in each such case which occur on or after the Closing Date).

"REGISTER," "REGISTERED," and "REGISTRATION" refer to a registration effected by preparing and filing a Registration Statement or Statements in compliance with the 1933 Act and pursuant to Rule 415 under the 1933 Act or any successor rule providing for offering securities on a continuous basis ("RULE 415"), and the declaration or ordering of effectiveness of such Registration Statement by the SEC.

"REGISTRABLE SECURITIES" means (a) the Common Shares and the Warrant Shares, held by any Purchaser, upon conversion of the Preferred Shares or exercise of the Warrants, as applicable, or upon any stock split, stock dividend, recapitalization or similar event with respect to such Common Shares or Warrant Shares; (b) any securities issued or issuable to a Purchaser upon the conversion, exercise or exchange of any Preferred Shares, Warrants, Common Shares or Warrant Shares; and (c) any other security of the Company issued as a dividend or other distribution with respect to, in exchange for, or in replacement of, Registrable Securities. As to any particular securities, such securities shall cease to be Registrable Securities when they have been sold pursuant to an effective registration statement or in compliance with Rule 144 or are eligible to be sold pursuant to subsection (k) of Rule 144 (without giving effect to the cashless exercise feature of the Warrants).

"REGISTRATION PERIOD" means the period from the Closing Date to the earlier of (i) the date which is five years after the SEC Effective Date, (ii) the date on which each Purchaser may sell all of its Registrable Securities without registration under the 1933 Act pursuant to subsection (k) of Rule 144, without (A) restriction on the manner of sale or the volume of securities which may be sold in any period, (B) the requirement for the giving of any notice to, or the making of any filing with, the SEC and (C) giving effect to the cashless exercise feature of the Warrants, and (iii) the date on which the Purchasers no longer beneficially own any Registrable Securities.

"REGISTRATION STATEMENT" means a registration statement of the Company under the 1933 Act, including any amendment thereto, required to be filed by the Company pursuant to this Agreement.

"RULE 144" means Rule 144 promulgated under the 1933 Act or any other similar rule or regulation of the SEC that may at any time permit a holder of any securities to sell securities of the Company to the public without registration under the 1933 Act.

"SEC" means the United States Securities and Exchange Commission.

"SEC EFFECTIVE DATE" means the date the Registration Statement is declared effective by the SEC.

"SEC FILING DATE" means the date the Registration Statement is first filed with the SEC pursuant to Section 2(a).

(b) Capitalized terms defined in the introductory paragraph or the recitals to this Agreement shall have the respective meanings therein provided. Capitalized terms used herein and not otherwise defined herein shall have the respective meanings set forth in the Subscription Agreement.

2. REGISTRATION.

(a) MANDATORY REGISTRATION.

(1) The Company shall prepare and, on or prior to the date which is 30 days after the Closing Date, file with the SEC a Registration Statement on Form S-3 (or, if the Company is not eligible to use such form at the time of filing with the SEC, Form S-1) which, on the date of filing with the SEC, covers the resale by the Initial Purchaser of a number of shares of Common Stock equal to the sum of (x) 150% of the number of Common Shares issuable upon conversion of the Preferred Shares at the then applicable Conversion Price (as defined in the Certificate) PLUS (y) the number of Warrant Shares issuable upon exercise in full of the Warrants (in each case determined without regard to the limitations on beneficial ownership contained in the Certificate and Warrants). If at any time the number of shares of Common Stock included in the Registration Statement required to be filed as provided in the first sentence of this Section 2(a) shall be insufficient to cover all of the Common Shares and Warrant Shares issuable upon conversion of the Preferred Shares and exercise of the unexercised portion of the Warrants, then promptly, but in no event later than 30 days after such insufficiency shall occur, the Company shall file with the SEC an additional Registration Statement on Form S-3 (or, if the Company is not eligible to use such form at the time of filing with the SEC, Form S-1) (which shall not constitute a post-effective amendment to the Registration Statement filed pursuant to the first sentence of this Section 2(a)), covering such number of shares of Common Stock as shall be sufficient to permit such exercise. The Company shall use its best efforts to have such additional Registration Statement declared effective as soon as possible thereafter. For all purposes of this Agreement such additional Registration Statement shall be deemed to be the Registration Statement required to be filed by the Company pursuant to Section 2(a) of this Agreement, and the Company and the Purchasers shall have the same rights and obligations with respect to such additional Registration Statement as they shall have with respect to the initial Registration Statement required to be filed by the Company pursuant to this Section 2(a). Without the written consent of the Majority Holders, the Registration Statement shall not include securities to be sold for the account of any selling security holder other than the Purchasers and the holders of the registration rights described in Schedule 11(a). As of the date of this Agreement, the Company is eligible to file the Registration Statement on Form S-3.

(2) Prior to the SEC Effective Date or during any time subsequent to the SEC Effective Date when the Registration Statement for any reason is not available for use by any Purchaser for the resale of any Registrable Securities hereunder, the Company shall not file any other registration statement or any amendment thereto with the SEC under the 1933 Act or request the acceleration of the effectiveness of any other registration statement previously filed with the SEC, other than any registration statement registering securities issued (v) to

holders of registration rights described in Schedule 11(a), (w) pursuant to compensation plans for employees, directors, officers, advisers or consultants of the Company and in accordance with the terms of such plans, (x) upon exercise of conversion, exchange, purchase or similar rights issued, granted or given by the Company and outstanding as of the date of this Agreement and disclosed in the SEC Reports or the Subscription Agreement, (y) pursuant to a public offering underwritten on a firm commitment basis registered under the 1933 Act or (z) as part of a transaction involving a strategic alliance, acquisition of stock or assets, merger, collaboration, joint venture, partnership or other similar arrangement of the Company with another corporation, partnership or other business entity (A) which is engaged in a business similar, complementary or related to the business of the Company or (B) pursuant to which the Company issues securities with the primary purpose to directly or indirectly acquire, license or otherwise become entitled to use technology relevant to or useful in the Company's business, so long as in each case of this clause (z) the Board of Directors of the Company by resolution duly adopted (and a copy of which shall be furnished to the Purchaser promptly after adoption) duly approves such transaction in accordance with its duties under applicable law (each of the foregoing transactions a "BOARD APPROVED TRANSACTION").

(b) CERTAIN OFFERINGS. If any offering pursuant to a Registration Statement pursuant to Section 2(d) hereof involves an underwritten offering, Purchasers who hold a majority in interest of the Registrable Securities (including for this purpose the Securities convertible into or exercisable for such Registrable Securities) subject to such underwritten offering shall have the right to select one legal counsel. The Purchasers who hold the Registrable Securities (including for this purpose the Securities convertible into or exercisable for such Registrable Securities) to be included in such underwriting shall pay all underwriting discounts and commissions and other fees and expenses of any investment banker or bankers and manager or managers (other than fees and expenses relating to registration of Registrable Securities under federal or state securities laws, which are payable by the Company pursuant to Section 5 hereof) with respect to such Registrable Securities and the fees and expenses of such legal counsel so selected by the Purchasers.

(c) CERTAIN PAYMENTS. So long as any Securities or Registrable Securities remain outstanding, if an Event (as defined below) shall occur, then (x) on each of the first month anniversary of the Event Date, the second month anniversary of the Event Date and the third month anniversary of the Event Date, unless and until the applicable Event is cured, the Company shall pay in cash to each Purchaser a default payment at the rate of 1.5% per month of the purchase price paid by such Purchaser pursuant to the Subscription Agreement and (y) on the fourth month anniversary of the Event Date and each monthly anniversary thereafter, unless and until the applicable Event is cured, the Company shall pay in cash to each Purchaser a default payment at the rate of 2.0% per month of the purchase price paid by such Purchaser pursuant to the Subscription Agreement (collectively, the "DELAY PAYMENTS"). The Delay Payments pursuant to the terms hereof shall apply on a pro-rata basis for any portion of a month prior to the cure of an Event. By way of example, if an Event is cured 15 days after the Event Date, the Company shall owe an amount to each Purchaser equal to such Purchaser's purchase price multiplied by 1.5% multiplied by 15 divided by 30. If the Company fails to pay any Delay Payments pursuant to this Section in full within seven (7) days after the date payable, the Company will pay interest on such Delay Payments at a rate of 12% per annum (or such lesser maximum amount that is permitted to be paid by applicable law) to the Purchaser, accruing daily

from the date such Delay Payments are due until such amounts, plus all such interest thereon, are paid in full. The Delay Payments shall not preclude the Purchaser from seeking appropriate additional damages and remedies for any such Events. Each of the following failures or breaches shall constitute an "EVENT":

(i) the initial Registration Statement is not filed on or prior to the 30th day following the Closing Date (if the Company files such Registration Statement without affording the Purchaser the opportunity to review and comment on the same as required by Section 3(h) hereof, subject to the Company's obligation under Regulation FD under the 1934 Act, the Company shall be deemed not to have satisfied this clause (i));

(ii) the initial Registration Statement filed hereunder is not declared effective by the Commission on or prior to the later of (A) the 75th day following the Closing Date (provided that the Company shall have filed a notice of acceleration with the SEC within five Trading Days of its receipt of notification that the SEC does not plan to review the Registration Statement) and (B) in the event of an SEC review of the Registration Statement, the 150th day following the Closing Date (the "EFFECTIVENESS REQUIRED DATE");

(iii) after a Registration Statement is filed with and declared effective by the SEC, such Registration Statement ceases to be effective as to a material portion of the Registrable Securities at any time prior to the expiration of the Registration Period without being succeeded within twenty (20) Trading Days by an amendment to such Registration Statement or by a subsequent Registration Statement filed with and declared effective by the SEC,

(iv) the Common Stock shall be delisted or suspended from trading on the Nasdaq National Market or on any exchange or other principal market for the Common Stock (other than a general suspension of trading on such market) for more than ten (10) consecutive Trading Days;

(v) the exercise rights of the Warrant holders pursuant to the Warrants or the conversion rights of the holders of Preferred Shares pursuant to the Preferred Shares are suspended or not complied with by the Company in accordance with the terms of the Warrants and/or the Preferred Shares due to a breach by the Company of its obligations under any of the Transaction Documents (as defined in the Subscription Agreement), and such suspension or non-compliance shall continue uncured for a period of 5 Trading Days after notice thereof is given by any such Purchaser to the Company;

(vi) an amendment to a Registration Statement is not filed by the Company with the SEC within twenty (20) Trading Days of the SEC's notifying the Company that such amendment is required in order for such Registration Statement to be declared effective; or

(vii) after a Registration Statement is filed with and declared effective by the SEC, any Purchaser is unable to sell Registrable Securities for any reason under the Registration Statement for more than fifteen (15) Trading Days or an aggregate of thirty (30)

Trading Days in a 12-month period after notice of any such inability is given by any such Purchaser to the Company.

For purposes of clause (i), the date upon which such thirty (30) day period is exceeded, for purposes of clause (ii), the date upon which such 75th day or 150th day (as applicable) is exceeded, for purposes of clause (iii) and (vi), the date upon which such twenty (20) Trading Day period is exceeded, for purposes of clause (iv), the date upon which such ten (10) Trading Day period is exceeded, for purposes of clause (v), the date upon which such five (5) Trading Day period is exceeded, or for purposes of clause (vii) the date on which such fifteen (15) Trading Day period or thirty (30) Trading Day period (as applicable) is exceeded, is hereby referred to as the "EVENT DATE").

(d) PIGGY-BACK REGISTRATIONS. If at any time the Company shall determine to prepare and file with the SEC a registration statement relating to an offering for its own account or the account of others under the 1933 Act of any of its equity securities, other than a registration statement registering securities issued (1) pursuant to compensation plans for employees, directors, officers, advisers or consultants of the Company and in accordance with the terms of such plans or (2) as part of a Board Approved Transaction, the Company shall send to each Purchaser who is entitled to registration rights under this Agreement written notice of such determination and, if within five (5) Trading Days after receipt of such notice, a Purchaser shall so request in writing, the Company shall include in such Registration Statement all or any part of the Registrable Securities the Purchaser requests to be registered, except that if, in connection with any underwritten public offering for the account of the Company, the managing underwriter(s) thereof shall impose a limitation on the number of shares of Common Stock which may be included in the Registration Statement because, in such underwriter(s)' judgment, such limitation is necessary to effect an orderly public distribution, then the Company shall be obligated to include in such Registration Statement only such limited portion of the Registrable Securities with respect to which the Purchaser has requested inclusion hereunder. Any exclusion of Registrable Securities shall be made pro rata among the Purchasers seeking to include Registrable Securities, in proportion to the number of Registrable Securities sought to be included by such Purchasers; provided, however, that the Company shall not exclude any Registrable Securities unless the Company has first excluded all outstanding securities the holders of which are not entitled by right to inclusion of securities in such Registration Statement; and provided further, however, that, after giving effect to the immediately preceding proviso, any exclusion of Registrable Securities shall be made pro rata with holders of other securities having the right to include such securities in the Registration Statement, based on the number of securities for which registration is requested except to the extent such pro rata exclusion of such other securities is prohibited under any written agreement entered into by the Company with the holder of such other securities prior to the date of this Agreement, in which case such other securities shall be excluded, if at all, in accordance with the terms of such agreement. No right to registration of Registrable Securities under this Section 2(d) shall be construed to limit any registration required under Section 2(a) hereof. The obligations of the Company under this Section 2(d) may be waived as to all Purchasers by the Majority Holders and as to a particular Purchaser by such Purchaser and shall expire after the Company has afforded the opportunity for each Purchaser to exercise registration rights under this Section 2(d) for two registrations; provided, however, that any Purchaser who shall have had any Registrable

Securities excluded from any Registration Statement in accordance with this Section 2(d) shall be entitled to include in an additional Registration Statement filed by the Company the Registrable Securities so excluded. Notwithstanding any other provision of this Agreement, if the Registration Statement required to be filed pursuant to Section 2(a) of this Agreement shall have been ordered effective by the SEC and the Company shall have maintained the effectiveness of such Registration Statement as required by this Agreement and if the Company shall otherwise have complied in all material respects with its obligations under this Agreement, then the Company shall not be obligated to register any Registrable Securities on such Registration Statement referred to in this Section 2(d).

(e) ELIGIBILITY FOR FORM S-3. The Company shall file all reports required to be filed by the Company with the SEC in a timely manner so as to obtain and/or maintain eligibility for the use of Form S-3.

3. OBLIGATIONS OF THE COMPANY. In connection with the registration of the Registrable Securities, the Company shall:

(a) prepare promptly, and file with the SEC not later than 30 days after the Closing Date, a Registration Statement with respect to the number of Registrable Securities provided in Section 2(a), and thereafter to use its best efforts to cause each Registration Statement relating to Registrable Securities to become effective as soon as possible after such filing but in any event on or prior to the Effectiveness Required Date, and keep the Registration Statement effective pursuant to Rule 415 at all times during the Registration Period; submit to the SEC, within three Trading Days after the Company learns that no review of the Registration Statement will be made by the staff of the SEC or that the staff of the SEC has no further comments on the Registration Statement, as the case may be, a request for acceleration of effectiveness of the Registration Statement to a time and date not later than 48 hours after the submission of such request; notify the Purchasers of the effectiveness of the Registration Statement on the date the Registration Statement is declared effective; and the Company represents and warrants to, and covenants and agrees with, the Purchasers that the Registration Statement (including any amendments or supplements thereto and prospectuses contained therein), (i) at the time it is first filed with the SEC, (ii) at the time it is ordered effective by the SEC and (iii) at all times during which it is required to be effective hereunder other than any period after which the Company notifies the Purchasers pursuant to Section 3(f) until the time when the Purchasers may again sell Registrable Securities pursuant to the Registration Statement (and each such amendment and supplement at the time it is filed with the SEC and at all times during which it is available for use in connection with the offer and sale of the Registrable Securities) shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein, or necessary to make the statements therein, in light of the circumstances in which they were made, not misleading;

(b) prepare and file with the SEC such amendments (including post-effective amendments) and supplements to the Registration Statement and the prospectus used in connection with the Registration Statement as may be necessary to keep the Registration Statement effective at all times during the Registration Period, and, during the Registration Period, comply with the provisions of the 1933 Act with respect to the disposition of all Registrable Securities of the Company covered by the Registration Statement until such time as

all of such Registrable Securities have been disposed of in accordance with the intended methods of disposition by the seller or sellers thereof as set forth in the Registration Statement;

(c) furnish to each Purchaser whose Registrable Securities are included in the Registration Statement and its legal counsel, (i) promptly after the same is prepared and publicly distributed, filed with the SEC or received by the Company, one copy of the Registration Statement and any amendment thereto, each preliminary prospectus and prospectus and each amendment or supplement thereto, each letter written by or on behalf of the Company to the SEC or the staff of the SEC and each item of correspondence from the SEC or the staff of the SEC relating to such Registration Statement, and (ii) such number of copies of a prospectus, including a preliminary prospectus, and all amendments and supplements thereto and such other documents, as such Purchaser may reasonably request in order to facilitate the disposition of the Registrable Securities owned by such Purchaser; notwithstanding the foregoing, prior to such disclosure and review, the Company shall notify the Purchasers if any portion of such documents contains material non-public information, in which case the Purchasers may decline to review such documents or portions thereof (the "RIGHT TO DECLINE REVIEW"), provided that nothing in this Agreement shall require the Company to provide any non-public information regarding the Company to the Initial Purchaser except to the extent that the disclosure of such additional information to the Initial Purchaser is consistent with Regulation FD under the 1934 Act.

(d) use commercially reasonable efforts to (i) register and qualify the Registrable Securities covered by the Registration Statement under such securities or blue sky laws of such jurisdictions as the Purchasers who hold a majority in interest of the Registrable Securities (including for this purpose the Securities convertible into or exercisable for such Registrable Securities) being offered reasonably request, (ii) prepare and file in those jurisdictions such amendments (including post-effective amendments) and supplements to such registrations and qualifications as may be necessary to maintain the effectiveness thereof at all times until the end of the Registration Period, (iii) take such other actions as may be necessary to maintain such registrations and qualifications in effect at all times during the Registration Period and (iv) take all other actions reasonably necessary or advisable to qualify the Registrable Securities for sale in such jurisdictions; provided, however, that the Company shall not be required in connection therewith or as a condition thereto (I) to qualify to do business in any jurisdiction where it would not otherwise be required to qualify but for this Section 3(d), (II) to subject itself to general taxation in any such jurisdiction, (III) to file a general consent to service of process in any such jurisdiction, (IV) to provide any undertakings that cause more than nominal expense or burden to the Company or (V) to make any change in its Certificate of Incorporation or by-laws, which in each case the Board of Directors of the Company determines in good faith to be contrary to the best interests of the Company and its stockholders;

(e) in the event that the Registrable Securities are being offered in an underwritten offering pursuant to Section 2(d), enter into and perform its obligations under an underwriting agreement, in usual and customary form, including, without limitation, customary indemnification and contribution obligations, with the underwriters of such offering;

(f) as promptly as practicable after becoming aware of such event or circumstance, notify each Purchaser of any event or circumstance of which the Company has knowledge, as a result of which the prospectus included in the Registration Statement, as then in

effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, and use its commercially reasonable efforts promptly to prepare a supplement or amendment to the Registration Statement to correct such untrue statement or omission, file such supplement or amendment with the SEC at such time as shall permit the Purchasers to sell Registrable Securities pursuant to the Registration Statement as promptly as practicable, and deliver a number of copies of such supplement or amendment to each Purchaser as such Purchaser may reasonably request;

(g) as promptly as practicable after becoming aware of such event, notify each Purchaser who holds Registrable Securities (including for this purpose the Securities convertible into or exercisable for such Registrable Securities) being sold (or, in the event of an underwritten offering, the managing underwriters) of the issuance by the SEC of any stop order or other suspension of effectiveness of the Registration Statement at the earliest possible time;

(h) not less than five Trading Days prior to the filing of the Registration Statement or any related prospectus or any amendment or supplement thereto (including any document that would be incorporated or deemed to be incorporated therein by reference), the Company shall, (i) furnish to the Purchasers and their counsel copies of all such documents proposed to be filed, which documents (other than those incorporated or deemed to be incorporated by reference) will be subject to the review of such Purchasers and their counsel (subject to the Right to Decline Review), and (ii) cause its officers and directors, counsel and independent certified public accountants to respond to such inquiries as shall be necessary, in the reasonable opinion of respective counsel to such to conduct a reasonable investigation within the meaning of the 1933 Act. The Company shall not file the Registration Statement or any such prospectus or any amendments or supplements thereto to which the Purchasers of a majority of the Registrable Securities and their counsel shall reasonably object in good faith.

(i) make generally available to its security holders as soon as practical, but not later than ninety (90) days after the close of the period covered thereby, an earnings statement (in form complying with the provisions of Rule 158 under the 1933 Act) covering a twelve-month period beginning not later than the first day of the Company's fiscal quarter next following the effective date of the Registration Statement;

(j) make available for inspection by any Purchaser, and any attorney, accountant or other agent retained by any such Purchaser (collectively, the "INSPECTORS"), all pertinent financial and other records, pertinent corporate documents and properties of the Company (collectively, the "RECORDS"), as shall be reasonably necessary to enable each Purchaser to exercise its due diligence responsibility, and cause the Company's officers, directors and employees to supply all information which any Inspector may reasonably request for purposes of such due diligence; provided, however, that each Inspector shall hold in confidence and shall not make any disclosure (except to a Purchaser) of any Record or other information which the Company determines in good faith to be confidential, and of which determination the Inspectors are so notified, unless (i) the disclosure of such Records is necessary to avoid or correct a misstatement or omission in any Registration Statement, (ii) the release of such Records is ordered pursuant to a subpoena or other order from a court or government body of competent jurisdiction or (iii) the information in such Records has been

made generally available to the public other than by disclosure in violation of this or any other agreement. The Company shall not be required to disclose any confidential information in such Records to any Inspector until and unless such Inspector shall have entered into confidentiality agreements (in form and substance satisfactory to the Company) with the Company with respect thereto, substantially in the form of this Section 3(j). Each Purchaser agrees that it shall, upon learning that disclosure of such Records is sought in or by a court or governmental body of competent jurisdiction or through other means, give prompt notice to the Company and allow the Company, at the Company's own expense, to undertake appropriate action to prevent disclosure of, or to obtain a protective order for, the Records deemed confidential. The Company shall hold in confidence and shall not make any disclosure of information concerning a Purchaser provided to the Company pursuant to Section 4(e) hereof unless (i) disclosure of such information is necessary to comply with federal or state securities laws or applicable rules and regulations of Nasdaq or other market or exchange, (ii) the disclosure of such information is necessary to avoid or correct a misstatement or omission in any Registration Statement, (iii) the release of such information is ordered pursuant to a subpoena or other order from a court or governmental body of competent jurisdiction or (iv) such information has been made generally available to the public other than by disclosure in violation of this or, to the knowledge of the Company, any other agreement. Each party agrees that it shall, upon learning that disclosure of such information concerning another party is sought in or by a court or governmental body of competent jurisdiction or through other means, give prompt notice to such other party and allow such other party, at such other party's own expense, to undertake appropriate action to prevent disclosure of, or to obtain a protective order for, such information;

(k) use its commercially reasonable efforts (i) to cause all the Registrable Securities covered by the Registration Statement to be listed on the Nasdaq National Market or such other principal securities market on which securities of the same class or series issued by the Company are then listed or traded or (ii) if securities of the same class or series as the Registrable Securities are not then listed on the Nasdaq National Market or any such other securities market, to cause all of the Registrable Securities covered by the Registration Statement to be listed on the New York Stock Exchange, the American Stock Exchange or the Nasdaq SmallCap Market;

(l) provide a transfer agent and registrar, which may be a single entity, for the Registrable Securities not later than the effective date of the Registration Statement;

(m) cooperate with the Purchasers who hold Registrable Securities being offered and the Securities exercisable for or convertible into such Registrable Securities to facilitate the timely preparation and delivery of certificates (not bearing any restrictive legends) representing Registrable Securities to be offered pursuant to the Registration Statement and enable such certificates to be in such denominations or amounts, as the case may be, as the Purchasers may reasonably request and registered in such names as the Purchasers may request; and, within three Trading Days after a Registration Statement which includes Registrable Securities is ordered effective by the SEC, the Company shall deliver to the transfer agent for the Registrable Securities (with copies to the Purchasers whose Registrable Securities are included in such Registration Statement) an instruction substantially in the form attached hereto as EXHIBIT 1 and shall cause legal counsel selected by the Company to deliver to the Purchasers an opinion of

such counsel in the form attached hereto as EXHIBIT 2 (with a copy to the Company's transfer agent);

(n) during the period the Company is required to maintain effectiveness of the Registration Statement pursuant to Section 3(a), the Company shall not bid for or purchase any Common Stock or any right to purchase Common Stock or attempt to induce any person to purchase any such security or right if such bid, purchase or attempt would in any way limit the right of the Purchasers to sell Registrable Securities by reason of the limitations set forth in Regulation M under the 1934 Act; and

(o) take all other reasonable actions requested by the Majority Holders necessary to expedite and facilitate disposition by the Purchasers of the Registrable Securities pursuant to the Registration Statement.

4. OBLIGATIONS OF THE PURCHASERS. In connection with the registration of the Registrable Securities, the Purchasers shall have the following obligations:

(a) It shall be a condition precedent to the obligations of the Company to complete the registration pursuant to this Agreement with respect to the Registrable Securities of a particular Purchaser that such Purchaser shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of the Registrable Securities held by it as shall be reasonably required to effect the registration of such Registrable Securities.

(b) Each Purchaser by such Purchaser's acceptance of the Registrable Securities agrees to cooperate with the Company as reasonably requested by the Company in connection with the preparation and filing of the Registration Statement hereunder, unless such Purchaser has notified the Company in writing of such Purchaser's election to exclude all of such Purchaser's Registrable Securities from the Registration Statement;

(c) In the event Purchasers holding a majority in interest of the Registrable Securities (including for this purpose the Securities exercisable for or convertible into such Registrable Securities) being registered determine to engage the services of an underwriter, each Purchaser agrees to enter into and perform such Purchaser's obligations under an underwriting agreement, in usual and customary form, including, without limitation, customary indemnification and contribution obligations, with the managing underwriter of such offering and take such other actions as are reasonably required in order to expedite or facilitate the disposition of the Registrable Securities, unless such Purchaser has notified the Company in writing of such Purchaser's election to exclude all of such Purchaser's Registrable Securities from the Registration Statement;

(d) Each Purchaser agrees that, upon receipt of any notice from the Company of the happening of any event of the kind described in Section 3(f) or 3(g), such Purchaser will immediately discontinue disposition of Registrable Securities pursuant to the Registration Statement covering such Registrable Securities until such Purchaser's receipt of the copies of the supplemented or amended prospectus contemplated by Section 3(f) or 3(g) and, if so directed by the Company, such Purchaser shall deliver to the Company (at the expense of the Company)

or destroy (and deliver to the Company a certificate of destruction) all copies in such Purchaser's possession of the prospectus covering such Registrable Securities current at the time of receipt of such notice;

(e) No Purchaser may participate in any underwritten registration hereunder unless such Purchaser (i) agrees to sell such Purchaser's Registrable Securities on the basis provided in any underwriting arrangements approved by the Purchasers entitled hereunder to approve such arrangements, (ii) completes and executes all questionnaires, powers of attorney, indemnities, underwriting agreements and other documents reasonably required under the terms of such underwriting arrangements and (iii) agrees to pay its pro rata share of all underwriting discounts and commissions and other fees and expenses of investment bankers and any manager or managers of such underwriting and legal expenses of the underwriters applicable with respect to its Registrable Securities, in each case to the extent not payable by the Company pursuant to the terms of this Agreement; and

(f) Each Purchaser agrees to take all reasonable actions necessary to comply with the prospectus delivery requirements of the 1933 Act applicable to its sales of Registrable Securities and to assist the Company in carrying out its obligations hereunder.

5. EXPENSES OF REGISTRATION. All reasonable expenses (other than underwriting discounts and commissions and other fees and expenses of investment bankers engaged by Purchasers and other than brokerage commissions), incurred in connection with registrations, filings or qualifications pursuant to Sections 2 and 3, including, without limitation, all registration, listing and qualifications fees, printers and accounting fees and the fees and disbursements of counsel for the Company (in addition to the payment of the Initial Purchaser's expenses to the extent provided in the Subscription Agreement), shall be borne by the Company.

6. INDEMNIFICATION. In the event any Registrable Securities are included in a Registration Statement under this Agreement:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Purchaser, the directors, officers and partners, if any, of such Purchaser, each person, if any, who controls any Purchaser within the meaning of the 1933 Act or the 1934 Act, any underwriter (as defined in the 1933 Act) for the Purchasers, the directors, officers and partners, if any, of such underwriter, and each person, if any, who controls any such underwriter within the meaning of the 1933 Act or the 1934 Act, against any losses, claims, damages, liabilities or expenses (joint or several) incurred (collectively, "CLAIMS") to which any of them may become subject under the 1933 Act, the 1934 Act or otherwise, insofar as such Claims (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any of the following: (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any post-effective amendment thereof or the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) any untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus if used prior to the effective date of such Registration Statement, or contained in the final prospectus (as amended or supplemented, if the Company files any amendment thereof or supplement thereto with the SEC) or the omission or alleged omission to state therein any material fact necessary to make the

statements made therein, in light of the circumstances under which the statements therein were made, not misleading or (iii) any violation or alleged violation by the Company of the 1933 Act, the 1934 Act, any state securities law or any rule or regulation under the 1933 Act, the 1934 Act or any state securities law (the matters in the foregoing clauses (i) through (iii) being, collectively, "VIOLATIONS"). Subject to the restrictions set forth in Section 6(d) with respect to the number of legal counsel, the Company shall reimburse the Purchasers and the other persons indemnified under this Section 6(a), promptly as such expenses are incurred and are due payable, for any legal fees or other reasonable expenses incurred by them in connection with investigating or defending any such Claim. Notwithstanding anything to the contrary contained herein, the indemnification agreement contained in this Section 6(a): (I) shall not apply to a Claim arising out of or based upon a Violation which occurs in reliance upon and in conformity with information furnished in writing to the Company by any indemnified person under this Section 6(a) or expressly for use in connection with the preparation of the Registration Statement, the prospectus or any such amendment thereof or supplement thereto, if such prospectus was timely made available by the Company pursuant to Section 3(c) hereof; (II) with respect to any preliminary prospectus shall not inure to the benefit of any indemnified person under this Section 6(a) if the untrue statement or omission of material fact contained in the preliminary prospectus was corrected in the prospectus, as then amended or supplemented, if such prospectus was timely made available by the Company pursuant to Section 3(c) hereof; and (III) shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of the Company, which consent shall not be unreasonably withheld. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of the indemnified person referred to in this Section 6(a) and shall survive the transfer of the Registrable Securities by the Purchasers pursuant to Section 9.

(b) In connection with any Registration Statement in which a Purchaser is participating, each such Purchaser agrees to indemnify and hold harmless, to the same extent and in the same manner set forth in Section 6(a), the Company, each of its directors, officers and partners who signs the Registration Statement, each person, if any, who controls the Company within the meaning of the 1933 Act or the 1934 Act, any underwriter and any other stockholder selling securities pursuant to the Registration Statement or any of its directors, officers, partners or any person who controls such stockholder or underwriter within the meaning of the 1933 Act or the 1934 Act, against any Claim to which any of them may become subject, under the 1933 Act, the 1934 Act or otherwise, insofar as such Claim arises out of or is based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished to the Company by such Purchaser expressly for use in connection with such Registration Statement or any post-effective amendment thereof, or any prospectus included therein; and such Purchaser will reimburse any legal or other expenses reasonably incurred by any indemnified person under this Section 6(b), promptly as such expenses are incurred and are due and payable, in connection with investigating or defending any such Claim; provided, however, that the indemnity agreement contained in this Section 6(b) shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of such Purchaser, which consent shall not be unreasonably withheld; provided, further, however, that each Purchaser shall be liable under this Section 6(b) for only that amount of a Claim as does not exceed the amount of the proceeds to such Purchaser from the sale of the Registrable Securities pursuant to such Registration Statement that resulted in such Claim. Such indemnity shall remain in full force and

effect regardless of any investigation made by or on behalf of any indemnified person under this Section 6(b) and shall survive the transfer of the Registrable Securities by the Purchasers pursuant to Section 9. Notwithstanding anything to the contrary contained herein, the indemnification agreement contained in this Section 6(b) with respect to any preliminary prospectus shall not inure to the benefit of any indemnified person under this Section 6(b) if the untrue statement or omission of material fact contained in the preliminary prospectus was corrected on a timely basis in the prospectus, as then amended or supplemented.

(c) The Company shall be entitled to receive indemnities from underwriters, selling brokers, dealer managers and similar securities industry professionals participating in any distribution, to the same extent as provided above, with respect to information so furnished in writing by such persons expressly for inclusion in the Registration Statement.

(d) Each party entitled to indemnification under this Section 6 (the "INDEMNIFIED PARTY") shall give notice to the party required to provide indemnification (the "INDEMNIFYING PARTY") promptly after such Indemnified Party has actual knowledge of any such Claim as to which indemnity may be sought and the Indemnifying Party shall have the right to participate in, and, to the extent the Indemnifying Party so desires, jointly with any other indemnifying party similarly noticed, to assume control of the defense thereof with counsel selected by the Indemnifying Party but reasonably acceptable to the Indemnified Party; provided, however, that an Indemnified Party shall have the right to retain its own counsel with the fees and expenses to be paid by the Indemnifying Party, if, in the reasonable opinion of counsel retained by the Indemnifying Party, the representation by such counsel of the Indemnified Party and the Indemnifying Party would be inappropriate due to actual or potential differing interests between such Indemnified Party and any other party represented by such counsel in such proceeding. In such event, the Company shall pay for only one separate legal counsel for the Purchasers; such legal counsel shall be selected by the Purchasers holding a majority in interest of the Registrable Securities (including for this purpose the Securities exercisable for or convertible into such Registrable Securities) included in the Registration Statement to which the Claim relates. The failure to deliver written notice to the Indemnifying Party within a reasonable time of the commencement of any such action shall not relieve such Indemnifying Party of any liability to the Indemnified Party under this Section 6, except to the extent that the Indemnifying Party is prejudiced in its ability to defend such action. The indemnification required by this Section 6 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as such expense, loss, damage or liability is incurred and is due and payable.

7. CONTRIBUTION. To the extent any indemnification by an Indemnifying Party is prohibited or limited by law, the Indemnifying Party agrees to make the maximum contribution with respect to any amounts for which it would otherwise be liable under Section 6 to the fullest extent permitted by law; provided, however, that (a) no contribution shall be made under circumstances where the maker would not have been liable for indemnification under the fault standards set forth in Section 6, (b) no seller of Registrable Securities guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the 1933 Act) shall be entitled to contribution from any seller of Registrable Securities who was not guilty of such fraudulent misrepresentation and (c) contribution by any Purchaser shall be limited in amount to the amount by which the net amount of proceeds received by such Purchaser (if any) from the sale of such

Registrable Securities that resulted in such Claim exceeds the purchase price paid by such Purchaser for such Registrable Securities.

8. REPORTS UNDER 1934 ACT. With a view to making available to the Purchasers the benefits of Rule 144, the Company agrees to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144;

(b) file with the SEC in a timely manner all reports and other documents required of the Company under the 1933 Act and the 1934 Act; and

(c) furnish to each Purchaser so long as such Purchaser owns Registrable Securities, promptly upon request, (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144 and the 1934 Act or describing any failure to so comply, (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company and (iii) such other information as may be reasonably requested to permit the Purchasers to sell such securities pursuant to Rule 144 without registration.

9. ASSIGNMENT OF THE REGISTRATION RIGHTS. The rights to have the Company register Registrable Securities pursuant to this Agreement shall be automatically assigned by the Purchasers to any Permitted Transferee only if: (a) the Purchaser agrees in writing with such Permitted Transferee to assign such rights, and a copy of such agreement is furnished to the Company within a reasonable time after such assignment, (b) except as otherwise provided in the Subscription Agreement, the Company is, within a reasonable time after such transfer or assignment, furnished with written notice of (i) the name and address of such Permitted Transferee and (ii) the securities with respect to which such registration rights are being transferred or assigned, (c) immediately following such transfer or assignment the further disposition of such securities by such Permitted Transferee is restricted under the 1933 Act and applicable state securities laws, and (d) at or before the time the Company receives the written notice contemplated by clause (b) of this sentence (or such later time within ten Business Days after the Company approves a Permitted Transferee pursuant to the Subscription Agreement), such Permitted Transferee agrees in writing with the Company to be bound by all of the provisions contained herein and in the Subscription Agreement. In connection with any such transfer the Company shall, at the cost and expense of the Permitted Transferee, promptly after such assignment take such actions as shall be reasonably acceptable to the Initial Purchaser and such Permitted Transferee to assure that the Registration Statement and related prospectus are available for use by such Permitted Transferee for sales of the Registrable Securities in respect of which the rights to registration have been so assigned; provided, however, that the Company shall not be required to breach any other obligation hereunder in taking such actions. In connection with any such assignment, each Purchaser shall have the right to assign to such Permitted Transferee such Purchaser's rights under the Subscription Agreement by notice of such assignment to the Company. Following such notice of assignment of rights under the Subscription Agreement, the Company shall be obligated to such Permitted Transferee to perform all of its covenants under the Subscription Agreement as if such Permitted Transferee were the Buyer under the Subscription Agreement.

10. AMENDMENT OF REGISTRATION RIGHTS. Any provision of this Agreement may be amended only with the written consent of the Majority Holders and the Company and, subject to the penultimate sentence of Section 2(d), the observance by the Company of any provision of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Majority Holders. Any amendment or waiver effected in accordance with this Section 10 shall be binding upon each Purchaser and the Company.

11. MISCELLANEOUS.

(a) Neither the Company nor any of its subsidiaries has entered, as of the date hereof, nor shall the Company or any of its subsidiaries, on or after the date of this Agreement, enter into any agreement with respect to its securities that is inconsistent with the rights granted to the Purchasers in this Agreement or otherwise conflicts with the provisions hereof. Except as and to the extent specified in Schedule 11(a) hereto, neither the Company nor any of its subsidiaries has previously entered into any agreement granting any registration rights with respect to any of its securities to any Person.

(b) Except as and to the extent specified in Schedule 11(a) hereto and except with the written consent of the Majority Holders, neither the Company nor any of its security holders (other than the Purchasers in such capacity pursuant hereto) may include securities of the Company in the Registration Statement other than the Registrable Securities, and the Company shall not after the date hereof enter into any agreement providing any such right to be so included to any of its security holders.

(c) A person or entity is deemed to be a holder of Registrable Securities whenever such person or entity owns of record such Registrable Securities. If the Company receives conflicting instructions, notices or elections from two or more persons or entities with respect to the same Registrable Securities, the Company shall act upon the basis of instructions, notice or election received from the registered owner of such Registrable Securities.

(d) Notices required or permitted to be given hereunder shall be in writing and shall be deemed to be sufficiently given when personally delivered (by hand, by courier, by telephone line facsimile transmission (with answer back confirmation) or other means) (i) if to the Company, at 3155 Porter Drive, Palo Alto, California 94304, Attention: Chief Executive Officer, facsimile number (650) 475-3101 with a copy to Ropes & Gray, One International Place, Boston, Massachusetts, 02110, Attention: Geoffrey B. Davis, Esq., (facsimile number (617) 951-7050), (ii) if to the Initial Purchaser, at 666 Fifth Avenue, New York, New York 10103, facsimile number (212) 841-6302 with a copy to Kleinberg, Kaplan, Wolff & Cohen, P.C., 551 Fifth Avenue, New York, New York 10176, Attention: Stephen M. Schultz, Esq., (facsimile number (212) 986-8866), and (iii) if to any other Purchaser, at such address as such Purchaser shall have provided in writing to the Company, or at such other address as each such party furnishes by notice given in accordance with this Section 11(b), and shall be effective upon receipt.

(e) Failure of any party to exercise any right or remedy under this Agreement or otherwise, or delay by a party in exercising such right or remedy, shall not operate as a waiver thereof.

(f) This Agreement shall be enforced, governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed entirely within such State. In the event that any provision of this Agreement is invalid or unenforceable under any applicable statute or rule of law, then such provision shall be deemed inoperative to the extent that it may conflict therewith and shall be deemed modified to conform with such statute or rule of law. Any provision hereof which may prove invalid or unenforceable under any law shall not affect the validity or enforceability of any other provision hereof. Each party hereby consents to the exclusive jurisdiction and venue of the federal and state courts located in New York, New York in any action or proceeding arising hereunder and to service of process by certified mail, return receipt requested (which shall constitute "personal service").

(g) This Agreement, together with each of the Transaction Documents, constitutes the entire agreement among the parties hereto with respect to the subject matter hereof. There are no restrictions, promises, warranties or undertakings, other than those set forth or referred to herein or therein. This Agreement and the Transaction Documents supersedes all prior agreements and understandings among the parties hereto with respect to the subject matter hereof.

(h) Subject to the requirements of Section 9 hereof, this Agreement shall inure to the benefit of and be binding upon the successors and assigns of each of the parties hereto.

(i) All pronouns and any variations thereof refer to the masculine, feminine or neuter, singular or plural, as the context may require.

(j) The headings in this Agreement are for convenience of reference only and shall not limit or otherwise affect the meaning hereof.

(k) Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

(l) The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

(m) This Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which shall constitute one and the same agreement. This Agreement, once executed by a party, may be delivered to the other party hereto by telephone line facsimile transmission of a copy of this Agreement bearing the signature of the party so delivering this Agreement.

IN WITNESS WHEREOF, the parties have caused this Registration Rights Agreement to be duly executed by their respective officers thereunto duly authorized as of day and year first above written.

STEMCELLS, INC.

By: /s/ Martin McGlynn

Name: Martin McGlynn
Title: President and CEO

THE INITIAL PURCHASER:

RIVERVIEW GROUP, L.L.C.

By: /s/ Terry Feeney

Name: Terry Feeney
Title: Chief Operating Officer

THIS AGREEMENT, dated as of December 4, 2001, (this "Agreement") by and between STEMCELLS, INC., a Delaware corporation (the "Company"), with headquarters located at 3155 Porter Drive, Palo Alto, California 94304, and Millennium Partners, L.P., a Cayman Islands limited partnership (the "Holder").

W I T N E S S E T H:

WHEREAS, the Holder and the Company are parties to those certain subscription agreements, dated as of July 31, 2000 and June 21, 2001 (the "Primary Subscription Agreements"), pursuant to which the Company, among other things, issued to the Holder two Class A Common Stock Purchase Warrants, No. A-1 ("A-1") and No. A-3 ("A-3," and together with A-1, the "Adjustable Warrants"), which constitute all of the outstanding Class A Common Stock Purchase Warrants;

WHEREAS, the Holder and the Company desire to restructure in part the investment effected pursuant to the Primary Subscription Agreement, as hereinafter set forth, by issuing shares of Common Stock to the Holder pursuant to the Adjustable Warrants, and canceling each of the Adjustable Warrants;

NOW THEREFORE, in consideration of the premises and the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Holder and the Company agree as follows:

1. AGREEMENT TO RESTRUCTURE.

(a) The parties hereby agree that A-1 is exercisable on a "cashless exercise" basis as of the date hereof pursuant to Section 1.1(a) of A-1 into 26,101 shares of Common Stock (the "A-1 Warrant Share Number"). The parties hereby further agree that A-3 is exercisable on a "cashless exercise" basis as of the date hereof into 150,000 shares of Common Stock (the "A-3 Warrant Share Number; the sum of the A-1 and A-3 Warrant Share Numbers, 176,101 shares of Common Stock, is the Warrant Share Number").

(b) The parties agreed that all of such shares of Common Stock shall be considered to be Warrant Shares for purposes of the Registration Rights Agreement.

(c) The Holder hereby exercises in full A-1 and A-3, on a cashless exercise basis for the Warrant Share Number.

(d) Upon execution of this Agreement the Company agrees to deliver to the Holder unlegended certificates representing the Warrant Share Number of shares of Common Stock, free and clear of any liens, claims and encumbrances, such certificates to be registered in the name of the Holder or its designee. The Holder shall have all the rights with respect to such delivery as are set forth in Section 2 of the Adjustable Warrant.

(e) Upon delivery of the shares of Common Stock in accordance with paragraph (d) above, the Holder shall have no further rights under either Adjustable Warrant to

acquire any additional shares of Common Stock, and the Adjustable Warrants shall be immediately cancelled and of no further effect.

2. COMPANY REPRESENTATIONS, WARRANTIES, ETC.

The Company makes the following representations and warranties to the Holder.

(a) AUTHORIZATION. The shares of Common Stock issuable upon the exercise of A-1 and A-3 have been duly authorized and, upon issuance thereof in accordance with the terms of this Agreement and A-1 and A-3, the shares of Common Stock will be validly issued, fully paid and non-assessable, free and clear of any and all liens, claims and encumbrances and shall be covered as securities registered for resale pursuant to the Registration Statement (No. 333-66692), dated August 3, 2001.

(b) HOLDING PERIOD. For purposes of Rule 144 promulgated under the Securities Act, the Company shall not object to the Holder's position that the shares of Common Stock issuable upon exercise of A-1 and A-3 in cashless exercise transactions in accordance with the terms of this Agreement shall be deemed to have been acquired by the Holder, and the holding period for such shares shall be deemed to have been commenced, on the respective issue dates of A-1, July 31, 2000, and A-3, June 21, 2001.

IN WITNESS WHEREOF, this Agreement has been duly executed by the Holder and the Company by their respective officers or other representatives thereunto duly authorized on the respective dates set forth below.

MILLENNIUM PARTNERS, LP

By: /s/ Terry Feeney

Name: Terry Feeney
Title: Chief Operating Officer

Address: 666 Fifth Avenue
New York, New York 10103
Facsimile: (212) 841-6302

STEMCELLS, INC.

By: /s/ Martin McGlynn

Name: Martin McGlynn
Title: President and CEO

THIS AGREEMENT, dated as of December 4, 2001, (this "Agreement") by and between STEMCELLS, INC., a Delaware corporation (the "Company"), with headquarters located at 3155 Porter Drive, Palo Alto, California 94304, and Millennium Partners, L.P., a Cayman Islands limited partnership ("Millennium") and Riverview Group, L.L.C., a Delaware limited liability company ("Riverview").

W I T N E S S E T H:

WHEREAS, the parties hereto desire to enter into this Agreement on the terms hereinafter set forth;

NOW, THEREFORE, in exchange for consideration hereby acknowledged as received the parties hereto hereby agree as follows:

1. DEFINITIONS. Capitalized terms used herein and not otherwise defined herein shall have the respective meanings set forth in that certain Subscription Agreement to which Riverview Group, L.L.C. and the Company are parties, dated as of December 4, 2001.

2. CERTAIN TRADING RESTRICTIONS.

(a) Each of Millennium and Riverview agree, as to itself only, that on and after the Closing Date until such time that neither Millennium nor Riverview holds any Securities, neither Millennium nor Riverview will engage in any short sales or other hedging transactions (including swaps, options or derivative securities) relating to shares of Common Stock unless (A) at the time of any such transaction, the Company is in breach of its obligations to register the resale of the Registrable Securities (as defined in the Registration Rights Agreement) pursuant to the Registration Rights Agreement or any other shares pursuant to which the Company has a similar registration obligation to Millennium and/or Riverview, or (B) in the event that such transaction is to take place after the 120th day following the Closing Date, the holders of the Securities and/or Registrable Securities are not then able to sell the shares of Common Stock pursuant to an effective Registration Statement (as defined in the Registration Rights Agreement) and a deliverable prospectus.

(b) Notwithstanding the foregoing, Millennium and Riverview may engage in short sales and/or hedging activity at any time so long as (x) after the date hereof, Millennium and Riverview (in the aggregate) may not sell short a number of shares of Common Stock in excess of the number of shares of Common Stock then issuable upon conversion in full of the Preferred Shares, (y) no such short sales shall be at a per share price below \$2.00 (as such figure shall be appropriately adjusted for any stock splits, reorganizations or similar events), and (z) the aggregate amount of such short sales made on any one day shall not exceed 5% of the total trading volume on such day. The limitations contained in clauses (x), (y) and (z) above of this paragraph shall only apply to short sales under this paragraph (b).

(c) The covenant contained in this Agreement shall supersede all existing agreements between the Company and Millennium and/or Riverview regarding restrictions on trading of the Company's capital stock by Millennium and/or Riverview.

3. NON-PUBLIC INFORMATION. Notwithstanding anything to the contrary in any Transaction Document or any other agreement between Millennium and/or Riverview and the Company, the Company shall not be required to provide any non-public information regarding the Company to Millennium and/or Riverview except to the extent that the disclosure of such additional information to such entity is consistent with Regulation FD under the Securities Act.

IN WITNESS WHEREOF, this Agreement has been duly executed by Millennium, Riverview and the Company by their respective officers or other representatives thereunto duly authorized on the respective dates set forth below.

MILLENNIUM PARTNERS, LP

By: /s/ Terry Feeney

Name: Terry Feeney
Title: Chief Operating Officer

RIVERVIEW GROUP, L.L.C.

By: /s/ Terry Feeney

Name: Terry Feeney
Title: Chief Operating Officer

Address: 666 Fifth Avenue
New York, New York 10103
Facsimile: (212) 841-6302

STEMCELLS, INC.

By: /s/ Martin McGlynn

Name: Martin McGlynn
Title: President and CEO

FOR IMMEDIATE RELEASE

STEMCELLS CANCELS WARRANTS ISSUED TO MILLENNIUM;
RAISES \$5 MILLION IN NEW FINANCING

PALO ALTO, CALIF., DECEMBER 6, 2001 - StemCells, Inc. (Nasdaq: STEM) announced today that it has cancelled the adjustable warrants issued in July 2000 and June 2001 to Millennium Partners, L.P. The cancellation, which followed a final exercise of both warrants on a cashless basis for 176,101 shares, terminates the possibility of future adjustments under which the warrants could have become exercisable for additional shares. The Company has no further adjustable warrants outstanding.

StemCells also announced today that it has completed a \$5 million financing transaction with a wholly owned subsidiary of Millennium Partners, L.P., which purchased 5,000 shares of a new series of 3 percent cumulative convertible preferred stock and a warrant to purchase 350,877 shares of common stock. StemCells received the entire \$5 million purchase price at the closing.

The holder can convert the preferred stock into common stock at a fixed price, subject to adjustment for stock splits, distributions and reclassifications only. The securities issued in this transaction have not been registered under the Securities Act of 1933 and may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements. The Company has agreed to register for resale the shares of common stock underlying the preferred stock and the warrant.

Cantor Fitzgerald & Co. acted as advisor to the Company in these transactions.

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StemCells, Inc. uses proprietary technology to isolate, purify and expand stem or progenitor cells that are found in human tissue and which are at least committed to become the mature cells of the organ from which they were derived. The goal is to use these cells to repair or repopulate neural or other tissue that has been damaged or lost due to disease or injury.

Apart from statements of historical facts, the text of this press release constitutes forward looking statements regarding, among other things, the future business operations of StemCells, Inc., or of StemCells California, Inc., its wholly-owned subsidiary (collectively, "the Company"). The Company's actual results may vary materially from those contemplated in the forward looking statements due to risks and uncertainties to which the Company is subject, including uncertainties regarding the Company's ability to obtain the capital resources needed to conduct the research, pre-clinical development and clinical trials necessary for regulatory approvals; the fact that the Company's stem cell technology is at the pre-clinical stage and has not yet led to the development of any proposed product; the uncertainty whether any products that may be generated in the future in the Company's stem cell programs will prove clinically effective and not cause tumors or other side effects; the uncertainty whether the Company will achieve revenues from product sales or become profitable; and others that are described in Exhibit 99 to the Company's Annual Report on Form 10-K entitled "Cautionary Factors Relevant to Forward Looking Statements."

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StemCells, Inc.
Martin McGlynn, President & CEO
650-475-3100, ext. 108

Trout Group/BMC Comm. Group
212-477-9007
Jonathan Fassberg (investors) ext. 16
Brad Miles (media) ext. 17