

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

FORM 8-A

FOR REGISTRATION OF CERTAIN CLASSES OF SECURITIES
PURSUANT TO SECTION 12(b) OR 12(g) OF THE
SECURITIES EXCHANGE ACT OF 1934

HARVARD BIOSCIENCE, INC.

(Exact name of registrant as specified in charter)

Delaware
(State or other jurisdiction
of incorporation)

04-3306140
(IRS employer
identification no.)

84 October Hill Road
Holliston, MA
(Address of principal executive offices)

01746
(Zip code)

Securities to be registered pursuant to Section 12(b) of the Act:

Title of each class
to be so registered
Preferred Stock Purchase Rights

Name of each exchange
on which each
class is to be registered
The NASDAQ Stock Market LLC

If this Form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A.(c), check the following box.

If this Form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A.(d), check the following box.

Securities Act registration statement file number to which this form relates: Not applicable.

Securities to be registered pursuant to Section 12(g) of the Act: None

Item 1. Description of Registrant's Securities to be Registered.

On February 5, 2008 the Board of Directors of Harvard Bioscience, Inc. (the "Company") adopted a Shareholder Rights Plan, as set forth in the Shareholder Rights Agreement, dated February 5, 2008, between the Company and Registrar and Transfer Company, as Rights Agent (the "Rights Agreement"). The following description of the terms of the Rights Agreement does not purport to be complete and is qualified in its entirety by reference to the Rights Agreement which is attached hereto as an exhibit and is incorporated herein by reference.

Rights Dividend

Pursuant to the terms of the Rights Agreement, the Board of Directors declared a dividend distribution of one Preferred Stock Purchase Right (a "Right") for each outstanding share of Common Stock of the Company (the "Common Stock") to shareholders of record as of the close of business on February 6, 2008 (the "Record Date"). In addition, one Right will automatically attach to each share of Common Stock issued between the Record Date and the Distribution Date (as hereinafter defined). Each Right entitles the registered holder thereof to purchase from the Company a unit consisting of one ten-thousandth of a share (a "Unit") of Series A Junior Participating Cumulative Preferred Stock, par value \$0.01 per share, of the Company (the "Preferred Stock") at a cash exercise price of \$44.00 per Unit (the "Exercise Price"), subject to adjustment, under certain conditions specified in the Rights Agreement and summarized below.

Distribution Date

Initially, the Rights are not exercisable and are attached to and trade with all shares of Common Stock outstanding as of, and issued subsequent to, the Record Date. The Rights will separate from the Common Stock and will become exercisable upon the earlier of (i) the close of business on the tenth calendar day following the first public announcement that a person or group of affiliated or associated persons (an "Acquiring Person") has acquired beneficial ownership of 20% or more of the outstanding shares of Common Stock, other than as a result of repurchases of stock by the Company or certain inadvertent actions by a shareholder (the date of said announcement being referred to as the "Stock Acquisition Date"), or (ii) the close of business on the tenth business day (or such later day as the Board of Directors may determine) following the commencement of a tender offer or exchange offer that could result upon its consummation in a person or group becoming the beneficial owner of 20% or more of the outstanding shares of Common Stock (the earlier of such dates being herein referred to as the "Distribution Date").

Notwithstanding the foregoing, with respect to any person who beneficially owns (for purposes of the Rights Agreement) 20% or more of the outstanding shares of Common Stock as of February 6, 2008 (such person being referred to in the Rights Agreement as a "Grandfathered Person"), the Distribution Date will not occur unless such Grandfathered Person has acquired beneficial ownership of shares of Common Stock representing an additional 1/2% of the outstanding shares of Common Stock.

Until the Distribution Date (or earlier redemption, exchange or expiration of the Rights), (i) the Rights will be evidenced by the Common Stock certificates and will be transferred with and only with such Common Stock certificates, (ii) new Common Stock certificates issued after the Record Date will contain a notation incorporating the Rights Agreement by reference, and (iii) the surrender for transfer of any certificates for Common Stock will also constitute the transfer of the Rights associated with the Common Stock represented by such certificate.

As soon as practicable after the Distribution Date, Right Certificates will be mailed to holders of record of Common Stock as of the close of business on the Distribution Date and, thereafter, the separate Right Certificates alone will represent the Rights. Except as otherwise determined by the Board of Directors, only shares of Common Stock issued prior to the Distribution Date will be issued with Rights.

Subscription and Merger Rights

In the event that a Stock Acquisition Date occurs, proper provision will be made so that each holder of a Right (other than an Acquiring Person or its associates or affiliates, whose Rights shall become null and void) will thereafter have the right to receive upon exercise that number of shares of Preferred Stock of the Company (or, in certain circumstances, including if there are insufficient shares of Common Stock to permit the exercise in full of the Rights, other securities, cash or property, or any combination of the foregoing) having a market value of two times the Exercise Price of the Right (such right being referred to as the "Subscription Right"). In the event that, at any time following the Stock Acquisition Date, (i) the Company consolidates with, or merges with and into, any other person, and the Company is not the continuing or surviving corporation, (ii) any person consolidates with the Company, or merges with and into the Company and the Company is the continuing or surviving corporation of such merger and, in connection with such merger, all or part of the shares of Common Stock are changed into or exchanged for stock or other securities of any other person or cash or any other property, or (iii) 50% or more of the Company's assets or earning power is sold, mortgaged or otherwise transferred, each holder of a Right (other than an Acquiring Person or its associates or affiliates, whose Rights shall become null and void) will thereafter have the right to receive, upon exercise, common stock of the acquiring company having a market value equal to two times the exercise price of the Right (such right being referred to as the "Merger Right"). The holder of a Right will continue to have the Merger Right whether or not such holder has exercised the Subscription Right. Rights that are or were beneficially owned by an Acquiring Person may (under certain circumstances specified in the Rights Agreement) become null and void.

Until a Right is exercised, the holder will have no rights as a shareholder of the Company (beyond those as an existing shareholder), including the right to vote or to receive dividends. While the distribution of the Rights will not be taxable to shareholders or to the Company, shareholders may, depending upon the circumstances, recognize taxable income in the event that the Rights become exercisable for Units, other securities of the Company, other consideration or for common stock of an acquiring company.

Exchange Feature

At any time after a person becomes an Acquiring Person, the Board of Directors may, at its option, exchange all or any part of the then outstanding and exercisable Rights for shares of Common Stock or Units at an exchange ratio specified in the Rights Agreement. Notwithstanding the foregoing, the Board of Directors generally will not be empowered to effect such exchange at any time after any person becomes the beneficial owner of 50% or more of the Common Stock of the Company.

Adjustments

The Exercise Price payable, and the number of Units or other securities or property issuable, upon exercise of the Rights are subject to adjustment from time to time to prevent dilution (i) in the event of a stock dividend on, or a subdivision, combination or reclassification of, the Preferred Stock, (ii) if holders of the Preferred Stock are granted certain rights or warrants to subscribe for Preferred Stock or convertible securities at less than the current market price of the Preferred Stock, or (iii) upon the distribution to holders of the Preferred Stock of evidences of indebtedness or assets (excluding regular quarterly cash dividends) or of subscription rights or warrants (other than those referred to above).

With certain exceptions, no adjustment in the Exercise Price will be required until cumulative adjustments amount to at least 1% of the Exercise Price. The Company is not obligated to issue fractional Units. If the Company elects not to issue fractional Units, in lieu thereof an adjustment in cash will be made based on the fair market value of the Preferred Stock on the last trading date prior to the date of exercise.

Redemption

The Rights may be redeemed in whole, but not in part, at a price of \$0.01 per Right (payable in cash, Common Stock or other consideration deemed appropriate by the Board of Directors) by the Board of Directors only until the earlier of (i) the time at which any person becomes an Acquiring Person or (ii) the expiration date of the Rights Agreement. Immediately upon the action of the Board of Directors ordering redemption of the Rights, the Rights will terminate and thereafter the only right of the holders of Rights will be to receive the redemption price.

Amendment

The Rights Agreement may be amended by the Board of Directors in its sole discretion until the time at which any person becomes an Acquiring Person. After such time the Board of Directors may, subject to certain limitations set forth in the Rights Agreement, amend the Rights Agreement only to cure any ambiguity, defect or inconsistency, to shorten or lengthen any time period, or to make changes that do not adversely affect the interests of Rights holders (excluding the interests of an Acquiring Person or its associates or affiliates). In addition, the Board of Directors may at any time prior to the time at which any person becomes an Acquiring Person, amend the Rights Agreement to lower the threshold at which a person becomes an Acquiring Person to not less than the greater of (i) the sum of .001% and the largest percentage of the outstanding Common Stock then owned by any person and (ii) 10%.

Expiration Date

The Rights are not exercisable until the Distribution Date and will expire at the close of business on February 6, 2018 (the “Expiration Date”), unless previously redeemed or exchanged by the Company.

Miscellaneous

The certificate of designations establishing the Preferred Stock and the form of Right Certificate are attached as Exhibits A and B, respectively, to the Rights Agreement (which is included as an exhibit to this Form 8-A). The foregoing description of the Rights does not purport to be complete and is qualified in its entirety by reference to the Rights Agreement which is incorporated herein by reference.

Item 2 - Exhibits.

- 3.1 Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Harvard Bioscience, Inc. classifying and designating the Series A Junior Participating Cumulative Preferred Stock.
- 4.1 Shareholder Rights Agreement, dated as of February 5, 2008, between Harvard Bioscience, Inc. and Registrar and Transfer Company, as Rights Agent.

SIGNATURE

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereto duly authorized.

HARVARD BIOSCIENCE, INC.

Date: February 8, 2008

By: /s/ Bryce Chicoyne

Name: Bryce Chicoyne

Title: Chief Financial Officer

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
3.1	Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of Harvard Bioscience, Inc. classifying and designating the Series A Junior Participating Cumulative Preferred Stock.
4.1	Shareholder Rights Agreement, dated as of February 5, 2008, between Harvard Bioscience, Inc. and Registrar and Transfer Company.

CERTIFICATE OF DESIGNATIONS
OF
SERIES A JUNIOR PARTICIPATING CUMULATIVE
PREFERRED STOCK
OF
HARVARD BIOSCIENCE, INC.

HARVARD BIOSCIENCE, INC., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "Corporation"),

DOES HEREBY CERTIFY:

WHEREAS, pursuant to authority conferred upon the Board of Directors by the Second Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation") the Corporation and pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, the Board of Directors, at a meeting duly held on February 5, 2008, adopted a resolution providing for the designations preferences and relative, participating, optional or other rights, and the qualifications, limitations or restrictions thereof, of a Series of Preferred Stock, which resolution is as follows:

RESOLVED: That a series of Preferred Stock of the Corporation designated as Series A Junior Participating Cumulative Preferred Stock, par value \$0.01 per share (the "Series A Preferred Stock"), has been created and that the designation and, amount thereof and the voting powers, preferences and relative participating, optional and other special rights of the shares of such series, and the qualifications, limitations or restrictions thereof are as set forth in the Certificate of Designations of Series A Junior Participating Cumulative Preferred Stock attached as Exhibit A to the Shareholder Rights Agreement.

Said Exhibit A reads as follows:

Section 1. Designation and Amount. The shares of such series shall be designated as "Series A Junior Participating Cumulative Preferred Stock" (the "Series A Preferred Stock"), and the number of shares initially constituting such series shall be 50,000; provided, however, that if more than a total of 50,000 shares of Series A Preferred Stock shall be issuable upon the exercise of Rights (the "Rights") issued pursuant to the Shareholder Rights Agreement dated as of February 5, 2008, between the Corporation and Registrar and Transfer Company, as Rights Agent (the "Rights Agreement"), the Board of Directors of the Corporation, pursuant to Section 151(g) of the General Corporation Law of the State of Delaware, may direct by resolution or resolutions that a certificate be properly executed, acknowledged, filed and recorded, in accordance with the provisions of Section 103 thereof, providing for the total number of shares of Series A Preferred Stock authorized to be issued to be increased (to the extent that the Certificate of Incorporation then permits) to the largest number of whole shares (rounded up to the nearest whole number) issuable upon exercise of such Rights.

Section 2. Dividends and Distributions.

(A)(i) Subject to the rights of the holders of any shares of any series of preferred stock (or any similar stock) ranking prior and superior to the Series A Preferred Stock with respect to dividends, the holders of shares of Series A Preferred Stock, in preference to the holders of shares of common stock and of any other junior stock, shall be entitled to receive, when, as and if declared by the Board of Directors out of funds legally available for the purpose, quarterly dividends payable in cash on the first day of March, June, September and December in each year (each such date being referred to herein as a "Quarterly Dividend Payment Date"), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or fraction of a share of Series A Preferred Stock, in an amount per share (rounded to the nearest cent) equal to the greater of (a) \$1.00 or (b) subject to the provisions for adjustment hereinafter set forth, 10,000 times the aggregate per share amount of all cash dividends, and 10,000 times the aggregate per share amount (payable in kind) of all non-cash dividends or other distributions other than a dividend payable in shares of common stock or a subdivision of the outstanding shares of common stock (by reclassification or otherwise), declared on the common stock since the immediately preceding Quarterly Dividend Payment Date, or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series A Preferred Stock. The multiple of cash and non-cash dividends declared on the common stock to which holders of the Series A Preferred Stock are entitled, which shall be 10,000 initially but which shall be adjusted from time to time as hereinafter provided, is hereinafter referred to as the "Dividend Multiple." In the event the Corporation shall at any time after February 5, 2008 (the "Rights Declaration Date") (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the Dividend Multiple thereafter applicable to the determination of the amount of dividends which holders of shares of Series A Preferred Stock shall be entitled to receive shall be the Dividend Multiple applicable immediately prior to such event multiplied by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

(ii) Notwithstanding anything else contained in this paragraph (A), the Corporation shall, out of funds legally available for that purpose, declare a dividend or distribution on the Series A Preferred Stock as provided in this paragraph (A) immediately after it declares a dividend or distribution on the common stock (other than a dividend payable in shares of common stock); provided that, in the event no dividend or distribution shall have been declared on the common stock during the period between any Quarterly Dividend Payment Date and the next subsequent Quarterly Dividend Payment Date, a dividend of \$1.00 per share on the Series A Preferred Stock shall nevertheless be payable on such subsequent Quarterly Dividend Payment Date.

(B) Dividends shall begin to accrue and be cumulative on outstanding shares of Series A Preferred Stock from the Quarterly Dividend Payment Date next preceding the date of issue of such shares of Series A Preferred Stock, unless the date of issue of such shares is prior to the record date for the first Quarterly Dividend Payment Date, in which case dividends on such

shares shall begin to accrue from the date of issue of such shares, or unless the date of issue is a Quarterly Dividend Payment Date or is a date after the record date for the determination of holders of shares of Series A Preferred Stock entitled to receive a quarterly dividend and before such Quarterly Dividend Payment Date, in either of which events such dividends shall begin to accrue and be cumulative from such Quarterly Dividend Payment Date. Accrued but unpaid dividends shall not bear interest. Dividends paid on the shares of Series A Preferred Stock in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at the time outstanding. The Board of Directors may fix in accordance with applicable law a record date for the determination of holders of shares of Series A Preferred Stock entitled to receive payment of a dividend or distribution declared thereon, which record date shall be not more than such number of days prior to the date fixed for the payment thereof as may be allowed by applicable law.

Section 3. Voting Rights. In addition to any other voting rights required by law, the holders of shares of Series A Preferred Stock shall have the following voting rights:

(A) Subject to the provision for adjustment hereinafter set forth, each share of Series A Preferred Stock shall entitle the holder thereof to 10,000 votes on all matters submitted to a vote of the stockholders of the Corporation. The number of votes which a holder of a share of Series A Preferred Stock is entitled to cast, which shall initially be 10,000 but which may be adjusted from time to time as hereinafter provided, is hereinafter referred to as the "Vote Multiple." In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the Vote Multiple thereafter applicable to the determination of the number of votes per share to which holders of shares of Series A Preferred Stock shall be entitled shall be the Vote Multiple immediately prior to such event multiplied by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

(B) Except as otherwise provided herein or by law, the holders of shares of Series A Preferred Stock and the holders of shares of common stock and the holders of shares of any other capital stock of this Corporation having general voting rights, shall vote together as one class on all matters submitted to a vote of stockholders of the Corporation.

(C) Except as otherwise required by applicable law or as set forth herein, holders of Series A Preferred Stock shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with holders of common stock as set forth herein) for taking any corporate action.

Section 4. Certain Restrictions.

(A) Whenever dividends or distributions payable on the Series A Preferred Stock as provided in Section 2 are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on shares of Series A Preferred Stock outstanding shall have been paid in full, the Corporation shall not:

(i) declare or pay dividends on, make any other distributions on, or redeem or purchase or otherwise acquire for consideration any shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock;

(ii) declare or pay dividends on or make any other distributions on any shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except dividends paid ratably on the Series A Preferred Stock and all such parity stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

(iii) except as permitted in subsection 4(A)(iv) below, redeem, purchase or otherwise acquire for consideration shares of any stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, provided that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such parity stock in exchange for shares of any stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series A Preferred Stock; or

(iv) purchase or otherwise acquire for consideration any shares of Series A Preferred Stock, or any shares of any stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except in accordance with a purchase offer made in writing or by publication (as determined by the Board of Directors) to all holders of such shares upon such terms as the Board of Directors, after consideration of the respective annual dividend rates and other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

(B) The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of stock of the Corporation unless the Corporation could, under subsection (A) of this Section 4, purchase or otherwise acquire such shares at such time and in such manner.

Section 5. Reacquired Shares. Any shares of Series A Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired and canceled promptly after the acquisition thereof. All such shares shall upon their cancellation become authorized but unissued shares of preferred stock and may be reissued as part of a new series of preferred stock to be created by resolution or resolutions of the Board of Directors, subject to the conditions and restrictions on issuance set forth herein.

Section 6. Liquidation, Dissolution or Winding Up. Upon any liquidation (voluntary or otherwise), dissolution or winding up of the Corporation, no distribution shall be made (x) to the holders of shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock unless, prior thereto, the holders of shares of Series A Preferred Stock shall have received an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, plus an amount

equal to the greater of (1) \$10,000.00 per share or (2) an aggregate amount per share, subject to the provision for adjustment hereinafter set forth, equal to 10,000 times the aggregate amount to be distributed per share to holders of common stock, or (y) to the holders of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except distributions made ratably on the Series A Preferred Stock and all other such parity stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up. In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the aggregate amount per share to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under clause (x) of the preceding sentence shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

Neither the consolidation of nor merging of the Corporation with or into any other corporation or corporations, nor the sale or other transfer of all or substantially all of the assets of the Corporation, shall be deemed to be a liquidation, dissolution or winding up of the Corporation within the meaning of this Section 6.

Section 7. Consolidation, Merger, etc. In case the Corporation shall enter into any consolidation, merger, combination or other transaction in which the shares of common stock are exchanged for or changed into other stock or securities, cash and/or any other property, then in any such case the shares of Series A Preferred Stock shall at the same time be similarly exchanged or changed in an amount per share (subject to the provision for adjustment hereinafter set forth) equal to 10,000 times the aggregate amount of stock, securities, cash and/or any other property (payable in kind), as the case may be, into which or for which each share of common stock is changed or exchanged, plus accrued and unpaid dividends, if any, payable with respect to the Series A Preferred Stock. In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the amount set forth in the preceding sentence with respect to the exchange or change of shares of Series A Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

Section 8. Redemption. The shares of Series A Preferred Stock shall not be redeemable; provided, however, that the foregoing shall not limit the ability of the Corporation to purchase or otherwise deal in such shares to the extent otherwise permitted hereby and by law.

Section 9. Ranking. Unless otherwise expressly provided in the Certificate of Incorporation or a Certificate of Designations relating to any other series of preferred stock of the Corporation, the Series A Preferred Stock shall rank junior to every other series of the Corporation's preferred stock previously or hereafter authorized, as to the payment of dividends and the distribution of assets on liquidation, dissolution or winding up and shall rank senior to the common stock.

Section 10. Amendment. The Certificate of Incorporation and this Certificate of Designations shall not be amended in any manner which would materially alter or change the powers, preferences or special rights of the Series A Preferred Stock so as to affect them adversely without the affirmative vote of the holders of two-thirds or more of the outstanding shares of Series A Preferred Stock, voting separately as a class.

Section 11. Fractional Shares. Series A Preferred Stock may be issued in whole shares or in any fraction of a share that is one ten-thousandth (1/10,000th) of a share or any integral multiple of such fraction, which shall entitle the holder, in proportion to such holder's fractional shares, to exercise voting rights, receive dividends, participate in distributions and to have the benefit of all other rights of holders of Series A Preferred Stock. In lieu of fractional shares, the Corporation may elect to make a cash payment as provided in the Rights Agreement for fractions of a share other than one ten-thousandth (1/10,000th) of a share or any integral multiple thereof.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed this 5th day of February, 2008.

HARVARD BIOSCIENCE, INC.

By: /s/ David Green

Name: David Green

Title: President

HARVARD BIOSCIENCE, INC.
AND
REGISTRAR AND TRANSFER COMPANY
AS RIGHTS AGENT
SHAREHOLDER RIGHTS AGREEMENT
DATED AS OF FEBRUARY 5, 2008

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SHAREHOLDER RIGHTS AGREEMENT

Agreement, dated as of February 5, 2008, between Harvard Bioscience, Inc., a Delaware corporation (the "Company"), and Registrar and Transfer Company, a New Jersey corporation (the "Rights Agent").

WITNESSETH

WHEREAS, the Board of Directors of the Company desires to provide shareholders of the Company with the opportunity to benefit from the long-term prospects and value of the Company and to ensure that shareholders of the Company receive fair and equal treatment in the event of any proposed takeover of the Company;

WHEREAS, on February 5, 2008, the Board of Directors of the Company authorized and declared a dividend distribution of one Right (as such term is hereinafter defined) for each outstanding share of Common Stock, par value \$0.01 per share, of the Company (the "Common Stock") outstanding as of February 6, 2008 (the "Record Date"), and authorized the issuance of one Right for each share of Common Stock of the Company issued (whether or not originally issued or sold from the Company's treasury, except in the case of treasury shares having associated Rights) between the Record Date and the earlier of the Distribution Date or the Expiration Date (as such terms are hereinafter defined), each Right initially representing the right to purchase one ten-thousandth of a share of Series A Junior Participating Cumulative Preferred Stock of the Company having the rights, powers and preferences set forth on Exhibit A hereto, upon the terms and subject to the conditions hereinafter set forth (the "Rights"); and

WHEREAS, the Company desires to appoint the Rights Agent to act as rights agent hereunder, in accordance with the terms and conditions hereof.

NOW, THEREFORE, in consideration of the premises and the mutual agreements herein set forth, the parties hereby agree as follows:

Section 1. Certain Definitions. For purposes of this Agreement, the following terms have the meanings indicated:

(a) "Acquiring Person" shall mean any Person (as such term is hereinafter defined) who or which, together with all Affiliates (as such term is hereinafter defined) and Associates (as such term is hereinafter defined) of such Person, shall be the Beneficial Owner (as such term is hereinafter defined) of 20% or more of the shares of Common Stock of the Company then outstanding, but shall not include (i) the Company, (ii) any Subsidiary (as such term is hereinafter defined) of the Company, (iii) any employee benefit plan or compensation arrangement of the Company or any Subsidiary of the Company or (iv) any Person holding shares of Common Stock of the Company organized, appointed or established by the Company or any Subsidiary of the Company for or pursuant to the terms of any such employee benefit plan or compensation arrangement (the Persons described in clauses (i) through (iv) above are

referred to herein as “Exempt Persons”); provided, however, that the term “Acquiring Person” shall not include any Grandfathered Person, unless such Grandfathered Person becomes the Beneficial Owner of a percentage of the shares of Common Stock of the Company then outstanding equal to or exceeding such Grandfathered Person’s Grandfathered Percentage.

Notwithstanding the foregoing, no Person shall become an “Acquiring Person” as the result of an acquisition by the Company of Common Stock of the Company which, by reducing the number of shares outstanding, increases the proportionate number of shares Beneficially Owned by such Person to 20% (or in the case of a Grandfathered Person, the Grandfathered Percentage applicable to such Grandfathered Person) or more of the shares of Common Stock of the Company then outstanding; provided, however, that if a Person shall become the Beneficial Owner of 20% (or in the case of a Grandfathered Person, the Grandfathered Percentage applicable to such Grandfathered Person) or more of the shares of Common Stock of the Company then outstanding by reason of share purchases by the Company and shall, after such share purchases by the Company, become the Beneficial Owner of any additional shares (other than pursuant to a stock split, stock dividend or similar transaction) of Common Stock of the Company and immediately thereafter be the Beneficial Owner of 20% (or in the case of a Grandfathered Person, the Grandfathered Percentage applicable to such Grandfathered Person) or more of the shares of Common Stock of the Company then outstanding, then such Person shall be deemed to be an “Acquiring Person.”

In addition, notwithstanding the foregoing, and notwithstanding anything to the contrary provided in the Agreement including without limitation in Sections 1(jj), 3(a) or 27, a Person shall not be an “Acquiring Person” if the Board of Directors of the Company determines at any time that a Person who would otherwise be an “Acquiring Person,” has become such without intending to become an “Acquiring Person,” and such Person divests as promptly as practicable (or within such period of time as the Board of Directors of the Company determines is reasonable) a sufficient number of shares of Common Stock of the Company so that such Person would no longer be an “Acquiring Person,” as defined pursuant to the foregoing provisions of this Section 1(a).

(b) “Adjustment Shares” shall have the meaning set forth in Section 11(a)(ii) hereof.

(c) “Affiliate” and “Associate” shall have the respective meanings ascribed to such terms in Rule 12b-2 of the General Rules and Regulations (the “Rules”) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as in effect on the date of this Agreement; provided, however, that no Person who is a director or officer of the Company shall be deemed an Affiliate or an Associate of any other director or officer of the Company solely as a result of his or her position as director or officer of the Company.

(d) A Person shall be deemed the “Beneficial Owner” of, and shall be deemed to “Beneficially Own” and have “Beneficial Ownership” of, any securities:

(i) which such Person or any of such Person’s Affiliates or Associates, directly or indirectly, Beneficially Owns (as determined pursuant to Rule 13d-3 of the Rules under the Exchange Act, as in effect on the date of this Agreement);

(ii) which such Person or any of such Person's Affiliates or Associates, directly or indirectly, has:

(A) the right to acquire (whether or not such right is exercisable immediately or only after the passage of time or upon the satisfaction of any conditions or both) pursuant to any agreement, arrangement or understanding (whether or not in writing) (other than customary agreements with and between underwriters and selling group members with respect to a bona fide public offering of securities) or upon the exercise of conversion rights, exchange rights, rights (other than the Rights), warrants or options, or otherwise; provided, however, that a Person shall not be deemed the "Beneficial Owner" of, or to "Beneficially Own" or have "Beneficial Ownership" of, (1) securities tendered pursuant to a tender or exchange offer made by or on behalf of such Person or any of such Person's Affiliates or Associates until such tendered securities are accepted for purchase or exchange; (2) securities issuable upon exercise of Rights at any time prior to the occurrence of a Triggering Event; or (3) securities issuable upon exercise of Rights from and after the occurrence of a Triggering Event, which Rights were acquired by such Person or any of such Person's Affiliates or Associates prior to the Distribution Date or pursuant to Sections 3(a), 11(i) or 22 hereof; or

(B) the right to vote pursuant to any agreement, arrangement or understanding (whether or not in writing); provided, however, that a Person shall not be deemed the "Beneficial Owner" of, or to "Beneficially Own" or have "Beneficial Ownership" of, any security under this clause (B) if the agreement, arrangement or understanding to vote such security (1) arises solely from a revocable proxy or consent given in response to a public proxy or consent solicitation made pursuant to a written proxy or consent solicitation statement filed with the Securities and Exchange Commission in accordance with the Rules of the Exchange Act and (2) is not also then reportable by such person on Schedule 13D under the Exchange Act (or any comparable or successor report); or

(C) the right to dispose of pursuant to any agreement, arrangement or understanding (whether or not in writing) (other than customary arrangements with and between underwriters and selling group members with respect to a bona fide public offering of securities); or

(iii) which are Beneficially Owned, directly or indirectly, by any other Person (or any Affiliate or Associate thereof) with which such Person or any of such Person's Affiliates or Associates has any agreement, arrangement or understanding (whether or not in writing) (other than customary agreements with and between underwriters and selling group members with respect to a bona fide public offering of securities) for the purpose of acquiring, holding, voting (except pursuant to a revocable proxy or consent as described in clause (B) of Section 1(d)(ii) hereof) or disposing of any securities of the Company;

provided, however, that (1) no Person engaged in business as an underwriter of securities shall be deemed the Beneficial Owner of any securities acquired through such Person's participation as an underwriter in good faith in a firm commitment underwriting until the expiration of forty (40) days after the date of such acquisition, and (2) no Person who is a director or an officer of the Company shall be deemed, as a result of his or her position as director or officer of the Company, the Beneficial Owner of any securities of the Company that are Beneficially Owned by any other director or officer of the Company.

For all purposes of this Agreement, the phrase "then outstanding," when used with reference to the percentage of the then outstanding securities Beneficially Owned by a Person, shall mean the number of securities then issued and outstanding together with the number of such securities not then actually issued and outstanding which such Person would be deemed to Beneficially Own hereunder.

(e) "Business Day" shall mean any day other than a Saturday, Sunday, or a day on which banking institutions in the State of New York are authorized or obligated by law or executive order to close.

(f) "Certificate of Incorporation" when used in reference to the Company shall mean the Second Amended and Restated Certificate of Incorporation, as may be amended from time to time, of the Company.

(g) "Close of Business" on any given date shall mean 5:00 p.m., Boston, Massachusetts time, on such date; provided, however, that if such date is not a Business Day it shall mean 5:00 p.m., Boston, Massachusetts time, on the next succeeding Business Day.

(h) "Common Stock" when used in reference to the Company shall mean the common stock, par value \$0.01 per share, of the Company or any other shares of capital stock of the Company into which such stock shall be reclassified or changed. "Common Stock" when used with reference to any Person other than the Company organized in corporate form shall mean (i) the capital stock or other equity interest of such Person with the greatest voting power, (ii) the equity securities or other equity interest having power to control or direct the management of such Person or (iii) if such Person is a Subsidiary of another Person, the Person or Persons which ultimately control such first-mentioned Person and which have issued any such outstanding capital stock, equity securities or equity interest. "Common Stock" when used with reference to any Person not organized in corporate form shall mean units of beneficial interest which (x) shall represent the right to participate generally in the profits and losses of such Person (including without limitation any flow-through tax benefits resulting from an ownership interest in such Person) and (y) shall be entitled to exercise the greatest voting power of such Person or, in the case of a limited partnership, shall have the power to remove or otherwise replace the general partner or partners.

(i) "Common Stock Equivalents" shall have the meaning set forth in Section 11(a)(iii) hereof.

(j) "Current Value" shall have the meaning set forth in Section 11(a)(iii) hereof.

(k) “Depository Agent” shall have the meaning set forth in Section 7(c) hereof.

(l) “Distribution Date” shall have the meaning set forth in Section 3(a) hereof.

(m) “Exchange Date” shall have the meaning set forth in Section 7(a) hereof.

(n) “Exempt Person” shall have the meaning set forth in the definition of “Acquiring Person.”

(o) “Exercise Price” shall have the meaning set forth in Section 4(a) hereof.

(p) “Expiration Date” and “Final Expiration Date” shall have the meanings set forth in Section 7(a) hereof.

(q) “Fair Market Value” of any securities or other property shall be as determined in accordance with Section 11(d) hereof.

(r) “Grandfathered Percentage” shall mean, with respect to any Grandfathered Person, the percentage of the outstanding shares of Common Stock of the Company that such Grandfathered Person, together with all Affiliates and Associates of such Grandfathered Person, Beneficially Owns as of the Grandfathered Time, plus an additional $\frac{1}{2}\%$; provided, however, that, in the event any Grandfathered Person shall sell, transfer, or otherwise dispose of any outstanding shares of Common Stock of the Company after the Grandfathered Time, the Grandfathered Percentage shall, subsequent to such sale, transfer or disposition, mean, with respect to such Grandfathered Person, the lesser of (i) the Grandfathered Percentage as in effect immediately prior to such sale, transfer or disposition or (ii) the percentage of outstanding shares of Common Stock of the Company that such Grandfathered Person Beneficially Owns immediately following such sale, transfer or disposition, plus an additional $\frac{1}{2}\%$.

(s) “Grandfathered Person” shall mean any Person who or which, together with all Affiliates and Associates of such Person, is, as of the Grandfathered Time, the Beneficial Owner of 20% or more of the shares of Common Stock of the Company then outstanding. Notwithstanding anything to the contrary provided in this Agreement, any Grandfathered Person who after the Grandfathered Time becomes the Beneficial Owner of less than 20% of the shares of Common Stock of the Company then outstanding shall cease to be a Grandfathered Person and shall be subject to all of the provisions of this Agreement in the same manner as any Person who is not and was not a Grandfathered Person.

(t) “Grandfathered Time” shall mean 9:00 a.m., Boston, Massachusetts time, on February 6, 2008.

(u) “Group” shall have the meaning set forth in clause (b) of the definition of “Person.”

(v) “Person” shall mean (a) an individual, a corporation, a partnership, a limited liability company, an association, a joint stock company, a trust, a business trust, a

government or political subdivision, any unincorporated organization, or any other association or entity including any successor (by merger or otherwise) thereof or thereto, and (b) a “group” as that term is used for purposes of Section 13(d)(3) of the Securities Exchange Act of 1934, as amended.

(w) “Preferred Stock” shall mean shares of Series A Junior Participating Cumulative Preferred Stock, par value \$0.01 per share, of the Company having the rights and preferences set forth in the form of Certificate of Designations attached hereto as Exhibit A.

(x) “Preferred Stock Equivalents” shall have the meaning set forth in Section 11(b) hereof.

(y) “Principal Party” shall have the meaning set forth in Section 13(b) hereof.

(z) “Redemption Date” shall have the meaning set forth in Section 7(a) hereof.

(aa) “Redemption Price” shall have the meaning set forth in Section 23 hereof.

(bb) “Registered Common Stock” shall have the meaning set forth in Section 13(b) hereof.

(cc) “Right Certificates” shall have the meaning set forth in Section 3(a) hereof.

(dd) “Section 11(a)(ii) Event” shall have the meaning set forth in Section 11(a)(ii) hereof.

(ee) “Section 11(a)(ii) Trigger Date” shall have the meaning set forth in Section 11(a)(iii) hereof.

(ff) “Section 13 Event” shall mean any event described in clauses (x), (y) or (z) of Section 13(a) hereof.

(gg) “Section 24(a)(i) Exchange Ratio” shall have the meaning set forth in Section 24(a)(i) hereof.

(hh) “Section 24(a)(ii) Exchange Ratio” shall have the meaning set forth in Section 24(a)(ii) hereof.

(ii) “Spread” shall have the meaning set forth in Section 11(a)(iii) hereof.

(jj) “Stock Acquisition Date” shall mean the date of the first public announcement (which for purposes of this definition shall include, without limitation, the issuance of a press release or the filing of a publicly-available report or other document with the Securities and Exchange Commission or any other governmental agency) by the Company, acting pursuant to a resolution adopted by the Board of Directors of the Company, or by an Acquiring Person, subject in each case to the last paragraph of Section 1(a), that an Acquiring Person has become such.

(kk) “Subsidiary” shall mean, with reference to any Person, any corporation or other entity of which securities or other ownership interests having ordinary voting power sufficient, in the absence of contingencies, to elect a majority of the board of directors or other persons performing similar functions of such corporation or other entity are at the time directly or indirectly Beneficially Owned or otherwise controlled by such Person either alone or together with one or more Affiliates of such Person.

(ll) “Substitution Period” shall have the meaning set forth in Section 11(a)(iii) hereof.

(mm) “Triggering Event” shall mean any Section 11(a)(ii) Event or any Section 13 Event.

Section 2. Appointment of Rights Agent. The Company hereby appoints the Rights Agent to act as agent for the Company and the holders of the Rights (who, in accordance with Section 3 hereof, shall prior to the Distribution Date (as hereinafter defined in Section 3(a)) also be the holders of the Common Stock of the Company) in accordance with the terms and conditions hereof, and the Rights Agent hereby accepts such appointment. The Company may from time to time appoint such Co-Rights Agents as it may deem necessary or desirable. In the event the Company appoints one or more Co-Rights Agents, the respective duties of the Rights Agent and any Co-Rights Agents shall be as the Company shall determine. The Company shall give ten (10) days’ prior written notice to the Rights Agent of the appointment of one or more Co-Rights Agents and the respective duties of the Rights Agent and any such Co-Rights Agents. The Rights Agent shall have no duty to supervise, and shall in no event be liable for, the acts or omissions of any such Co-Rights Agent.

Section 3. Issue of Right Certificates.

(a) From the date hereof until the earlier of (i) the Close of Business on the tenth calendar day after the Stock Acquisition Date or (ii) the Close of Business on the tenth Business Day (or such later calendar day, if any, as the Board of Directors of the Company may determine in its sole discretion) after the date a tender or exchange offer by any Person, other than an Exempt Person, is first published or sent or given within the meaning of Rule 14d-4(a) of the Exchange Act, or any successor rule, if, upon consummation thereof, such Person could become the Beneficial Owner of 20% (or in the case of a Grandfathered Person, the Grandfathered Percentage applicable to such Grandfathered Person) or more of the shares of Common Stock of the Company then outstanding (including any such date which is after the date of this Agreement and prior to the issuance of the Rights) (the earliest of such dates being herein referred to as the “Distribution Date”), (x) the Rights will be evidenced (subject to the provisions of Section 3(b) hereof) by the certificates for the Common Stock of the Company registered in the names of the holders of the Common Stock of the Company (which certificates for Common Stock of the Company shall be deemed also to be certificates for Rights) and not by separate certificates, and (y) the Rights will be transferable only in connection with the transfer of the underlying shares of Common Stock of the Company. As soon as practicable after the

Distribution Date, the Rights Agent will, at the Company's expense send, by first-class, insured, postage prepaid mail, to each record holder of the Common Stock of the Company as of the Close of Business on the Distribution Date, at the address of such holder shown on the records of the Company, one or more certificates, in substantially the form of Exhibit B hereto (the "Right Certificates"), evidencing one Right for each share of Common Stock of the Company so held, subject to adjustment as provided herein. In the event that an adjustment in the number of Rights per share of Common Stock of the Company has been made pursuant to Section 11(o) hereof, the Company may make the necessary and appropriate rounding adjustments (in accordance with Section 14(a) hereof) at the time of distribution of the Right Certificates, so that Right Certificates representing only whole numbers of Rights are distributed and cash is paid in lieu of any fractional Rights. As of and after the Close of Business on the Distribution Date, the Rights will be evidenced solely by such Right Certificates.

(b) With respect to certificates for the Common Stock of the Company issued prior to the Close of Business on the Record Date, the Rights will be evidenced by such certificates for the Common Stock of the Company on or until the Distribution Date (or the earlier redemption, expiration or termination of the Rights), and the registered holders of the Common Stock of the Company also shall be the registered holders of the associated Rights. Until the Distribution Date (or the earlier redemption, expiration or termination of the Rights), the transfer of any of the certificates for the Common Stock of the Company outstanding prior to the date of this Agreement shall also constitute the transfer of the Rights associated with the Common Stock of the Company represented by such certificate.

(c) Certificates for the Common Stock of the Company issued after the Record Date, but prior to the earlier of the Distribution Date or the Expiration Date, shall be deemed also to be certificates for Rights, and shall bear a legend, substantially in the form set forth below:

This certificate also evidences and entitles the holder hereof to certain Rights as set forth in a Shareholder Rights Agreement between Harvard Bioscience, Inc. and Registrar and Transfer Company (or any successor thereto), as Rights Agent, dated as of February 5, 2008 as amended, restated, renewed, supplemented or extended from time to time (the "Rights Agreement"), the terms of which are hereby incorporated herein by reference and a copy of which is on file at the principal offices of Harvard Bioscience, Inc. and the stock transfer administration office of the Rights Agent. Under certain circumstances, as set forth in the Rights Agreement, such Rights will be evidenced by separate certificates and will no longer be evidenced by this certificate. Harvard Bioscience, Inc. may redeem the Rights at a redemption price of \$0.01 per Right, subject to adjustment, under the terms of the Rights Agreement. Harvard Bioscience, Inc. will mail to the holder of this certificate a copy of the Rights Agreement, as in effect on the date of mailing, without charge promptly after receipt of a written request therefor. Under certain circumstances, Rights issued to or held by Acquiring Persons or any Affiliates or Associates thereof (as defined in the

Rights Agreement), and any subsequent holder of such Rights, may become null and void. The Rights shall not be exercisable, and shall be void so long as held, by a holder in any jurisdiction where the requisite qualification, if any, to the issuance to such holder, or the exercise by such holder, of the Rights in such jurisdiction shall not have been obtained or be obtainable.

With respect to such certificates containing the foregoing legend, the Rights associated with the Common Stock of the Company represented by such certificates shall be evidenced by such certificates alone until the earlier of the Distribution Date or the Expiration Date, and the transfer of any of such certificates shall also constitute the transfer of the Rights associated with the Common Stock of the Company represented by such certificates. In the event that the Company purchases or acquires any shares of Common Stock of the Company after the Record Date but prior to the Distribution Date, any Rights associated with such Common Stock of the Company shall be deemed canceled and retired so that the Company shall not be entitled to exercise any Rights associated with the shares of Common Stock of the Company which are no longer outstanding. The failure to print the foregoing legend on any such certificate representing Common Stock of the Company or any defect therein shall not affect in any manner whatsoever the application or interpretation of the provisions of Section 7(e) hereof.

Section 4. Form of Right Certificates.

(a) The Right Certificates (and the forms of election to purchase shares and of assignment and certificate to be printed on the reverse thereof) shall each be substantially in the form of Exhibit B hereto and may have such marks of identification or designation and such legends, summaries or endorsements printed thereon as the Company may deem appropriate and as are not inconsistent with the provisions of this Agreement, or as may be required to comply with any applicable law, rule or regulation or with any rule or regulation of any stock exchange on which the Rights may from time to time be listed, or to conform to customary usage. The Right Certificates shall be in a machine printable format and in a form reasonably satisfactory to the Rights Agent. Subject to the provisions of Section 11 and Section 22 hereof, the Right Certificates, whenever distributed, shall be dated as of the Record Date, shall show the date of countersignature, and on their face shall entitle the holders thereof to purchase such number of one ten-thousandths of a share of Preferred Stock as shall be set forth therein at the price set forth therein (the "Exercise Price"), but the number of such shares and the Exercise Price shall be subject to adjustment as provided herein.

(b) Any Right Certificate issued pursuant to Section 3(a) or Section 22 hereof that represents Rights Beneficially Owned by (i) an Acquiring Person or any Associate or Affiliate of an Acquiring Person, (ii) a transferee of an Acquiring Person (or of any Associate or Affiliate of an Acquiring Person) who becomes a transferee after the Acquiring Person becomes such, or (iii) a transferee of an Acquiring Person (or of any such Associate or Affiliate) who becomes a transferee prior to or concurrently with the Acquiring Person becoming such and receives such Rights pursuant to either (A) a transfer (whether or not for consideration) from the Acquiring Person to holders of equity interests in such Acquiring Person or to any Person with whom the Acquiring Person has any continuing agreement, arrangement or understanding (whether or not in writing) regarding the transferred Rights, the shares of Common Stock of the

Company associated with such Rights or the Company or (B) a transfer which the Board of Directors of the Company has determined is part of a plan, arrangement or understanding which has as a primary purpose or effect the avoidance of Section 7(e) hereof, and any Right Certificate issued pursuant to Section 6, Section 11 or Section 22 upon transfer, exchange, replacement or adjustment of any other Right Certificate referred to in this sentence, shall have deleted therefrom the second sentence of the existing legend on such Right Certificate and in substitution therefor shall contain the following legend:

The Rights represented by this Right Certificate are or were Beneficially Owned by a Person who was or became an Acquiring Person or an Affiliate or an Associate of an Acquiring Person (as such terms are defined in the Rights Agreement). This Right Certificate and the Rights represented hereby may become null and void under certain circumstances as specified in Section 7(e) of the Rights Agreement.

The Company shall give notice to the Rights Agent promptly after it becomes aware of the existence and identity of any Acquiring Person or any Associate or Affiliate thereof. The Company shall instruct the Rights Agent in writing of the Rights which should be so legended. The failure to print the foregoing legend on any such Right Certificate or any defect therein shall not affect in any manner whatsoever the application or interpretation of the provisions of Section 7(e) hereof.

Section 5. Countersignature and Registration.

(a) The Right Certificates shall be executed on behalf of the Company by its Chairman of the Board of Directors, or its President or any Vice President and by its Treasurer or any Assistant Treasurer, or by its Secretary or any Assistant Secretary, either manually or by facsimile signature, and shall have affixed thereto the Company's seal or a facsimile thereof which shall be attested to by the Secretary or any Assistant Secretary of the Company, either manually or by facsimile signature. The Right Certificates shall be manually countersigned by an authorized signatory of the Rights Agent and shall not be valid for any purpose unless so countersigned, and such countersignature upon any Right Certificate shall be conclusive evidence, and the only evidence, that such Right Certificate has been duly countersigned as required hereunder. In case any officer of the Company who shall have signed any of the Right Certificates shall cease to be such officer of the Company before countersignature by the Rights Agent and issuance and delivery by the Company, such Right Certificates, nevertheless, may be countersigned by an authorized signatory of the Rights Agent, and issued and delivered by the Company with the same force and effect as though the person who signed such Right Certificates had not ceased to be such officer of the Company; and any Right Certificates may be signed on behalf of the Company by any person who, at the actual date of the execution of such Right Certificate, shall be a proper officer of the Company to sign such Right Certificate, although at the date of the execution of this Rights Agreement any such person was not such an officer.

(b) Following the Distribution Date, the Rights Agent will keep or cause to be kept, at one of its offices designated as the appropriate place for surrender of Right Certificates upon exercise or transfer, books for registration and transfer of the Right Certificates issued hereunder. Such books shall show the names and addresses of the respective holders of the Right Certificates, the number of Rights evidenced on its face by each of the Right Certificates and the date of each of the Right Certificates.

Section 6. Transfer, Split Up, Combination and Exchange of Right Certificates; Mutilated, Destroyed, Lost or Stolen Right Certificates.

(a) Subject to the provisions of Section 4(b), Section 7(e) and Section 14 hereof, at any time after the Close of Business on the Distribution Date, and at or prior to the Close of Business on the Expiration Date, any Right Certificate or Certificates may be transferred, split up, combined or exchanged for another Right Certificate or Certificates, entitling the registered holder to purchase a like number of one ten-thousandths of a share of Preferred Stock (or following a Triggering Event, Common Stock of the Company, cash, property, debt securities, Preferred Stock or any combination thereof, including any such securities, cash or property following a Section 13 Event) as the Right Certificate or Certificates surrendered then entitled such holder to purchase and at the same Exercise Price. Any registered holder desiring to transfer, split up, combine or exchange any Right Certificate shall make such request in writing delivered to the Rights Agent, and shall surrender the Right Certificate or Certificates to be transferred, split up, combined or exchanged, with the form of assignment and certificate duly executed, at the office or offices of the Rights Agent designated for such purpose. Neither the Rights Agent nor the Company shall be obligated to take any action whatsoever with respect to the transfer of any such surrendered Right Certificate until the registered holder shall have completed and signed the certificate contained in the form of assignment on the reverse side of such Right Certificate and shall have provided such additional evidence of the identity of the Beneficial Owner (or former Beneficial Owner) or Affiliates or Associates thereof as the Company shall reasonably request. Thereupon the Rights Agent shall, subject to Section 4(b), Section 7(e) and Section 14 hereof, countersign and deliver to the Person entitled thereto a Right Certificate or Certificates, as the case may be, as so requested. The Company may require payment by the registered holder of a Right Certificate, of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with any transfer, split up, combination or exchange of Right Certificates.

(b) Upon receipt by the Company and the Rights Agent of evidence reasonably satisfactory to them of the loss, theft, destruction or mutilation of a Right Certificate, and, in case of loss, theft or destruction, of indemnity or security satisfactory to them, and reimbursement to the Company and the Rights Agent of all reasonable expenses incidental thereto, and upon surrender to the Rights Agent and cancellation of the Right Certificate, if mutilated, the Company will execute and deliver a new Right Certificate of like tenor to the Rights Agent for countersignature and delivery to the registered owner in lieu of the Right Certificate so lost, stolen, destroyed or mutilated.

Section 7. Exercise of Rights; Exercise Price; Expiration Date of Rights.

(a) Subject to Section 7(e) hereof, the registered holder of any Right Certificate may exercise the Rights evidenced thereby (except as otherwise provided herein) in whole or in part at any time after the Distribution Date upon surrender of the Right Certificate, with the form of election to purchase and the certificate on the reverse side thereof duly

executed, to the Rights Agent at the office or offices of the Rights Agent designated for such purpose, together with payment of the aggregate Exercise Price for the total number of one ten-thousandths of a share of Preferred Stock (or other securities, cash or other assets, as the case may be) as to which such surrendered Rights are then exercised, at or prior to the earlier of (i) the Close of Business on the tenth anniversary of the Record Date (the "Final Expiration Date"), (ii) the time at which the Rights are redeemed as provided in Section 23 hereof (the "Redemption Date") or (iii) the time at which such Rights are exchanged as provided in Section 24 hereof (the "Exchange Date") (the earliest of (i), (ii) or (iii) being herein referred to as the "Expiration Date"). Except as set forth in Section 7(e) hereof and notwithstanding any other provision of this Agreement, any Person who prior to the Distribution Date becomes a record holder of shares of Common Stock of the Company may exercise all of the rights of a registered holder of a Right Certificate with respect to the Rights associated with such shares of Common Stock of the Company in accordance with the provisions of this Agreement, as of the date such Person becomes a record holder of shares of Common Stock of the Company.

(b) The Exercise Price for each one ten-thousandth of a share of Preferred Stock pursuant to the exercise of a Right shall initially be Forty-Four United States Dollars (U.S. \$44.00), shall be subject to adjustment from time to time as provided in Section 11 and Section 13 hereof and shall be payable in lawful money of the United States of America in accordance with Section 7(c) below.

(c) As promptly as practicable following the Distribution Date, the Company shall deposit with a corporation, trust, bank or similar institution in good standing organized under the laws of the United States or any State of the United States, which is authorized under such laws to exercise corporate trust or stock transfer powers and is subject to supervision or examination by a federal or state authority (such institution is hereinafter referred to as the "Depository Agent"), certificates representing the shares of Preferred Stock that may be acquired upon exercise of the Rights and the Company shall cause such Depository Agent to enter into an agreement pursuant to which the Depository Agent shall issue receipts representing interests in the shares of Preferred Stock so deposited. Upon receipt of a Right Certificate representing exercisable Rights, with the form of election to purchase and the certificate on the reverse side thereof duly executed, accompanied by payment of the Exercise Price for the shares to be purchased and an amount equal to any applicable transfer tax (as determined by the Rights Agent) by certified check or bank draft payable to the order of the Company or by money order, the Rights Agent shall, subject to Section 20(k) and Section 14(b) hereof, thereupon promptly (i) requisition from the Depository Agent (or make available, if the Rights Agent is the Depository Agent) depository receipts or certificates for the number of one ten-thousandths of a share of Preferred Stock to be purchased and the Company hereby irrevocably authorizes the Depository Agent to comply with all such requests, (ii) when appropriate, requisition from the Company the amount of cash, if any, to be paid in lieu of issuance of fractional shares in accordance with Section 14 hereof, (iii) promptly after receipt of such certificates or depository receipts, cause the same to be delivered to or upon the order of the registered holder of such Right Certificate, registered in such name or names as may be designated by such holder and (iv) when appropriate, after receipt of each certificate or depository receipts promptly deliver such cash to or upon the order of the registered holder of such Right Certificate. In the event that the Company is obligated to issue other securities (including Common Stock of the Company) of the Company, pay cash or distribute other property pursuant to Section 11(a) hereof, the Company

will make all arrangements necessary so that such other securities, cash or other property are available for distribution by the Rights Agent, if and when appropriate. The payment of the Exercise Price may be made by certified or bank check payable to the order of the Company, or by money order or wire transfer of immediately available funds to the account of the Company (provided that notice of such wire transfer shall be given by the holder of the related Right to the Rights Agent).

(d) In case the registered holder of any Right Certificate shall exercise less than all the Rights evidenced thereby, a new Right Certificate evidencing Rights equivalent to the Rights remaining unexercised shall be issued by the Rights Agent and delivered to the registered holder of such Right Certificate or to his duly authorized assigns, subject to the provisions of Section 14 hereof.

(e) Notwithstanding anything in this Agreement to the contrary, from and after the first occurrence of a Section 11(a)(ii) Event or Section 13 Event, any Rights Beneficially Owned by (i) an Acquiring Person or any Associate or Affiliate of an Acquiring Person, (ii) a transferee of an Acquiring Person (or of any Associate or Affiliate of an Acquiring Person) who becomes a transferee after the Acquiring Person becomes such or (iii) a transferee of an Acquiring Person (or of any Associate or Affiliate of an Acquiring Person) who becomes a transferee prior to or concurrently with the Acquiring Person becoming such and receives such Rights pursuant to either (A) a transfer (whether or not for consideration) from the Acquiring Person to holders of equity interests in such Acquiring Person or to any Person with whom the Acquiring Person has any continuing agreement, arrangement or understanding regarding the transferred Rights, the shares of Common Stock of the Company associated with such Rights or the Company, or (B) a transfer which the Board of Directors of the Company has determined is part of a plan, arrangement or understanding which has as a primary purpose or effect the avoidance of this Section 7(e), shall be null and void without any further action and no holder of such Rights shall have any rights whatsoever with respect to such Rights, whether under any provision of this Agreement or otherwise. The Company shall use all reasonable efforts to ensure that the provisions of this Section 7(e) and Section 4(b) hereof are complied with, but shall have no liability to any holder of Right Certificates or other Person as a result of its failure to make any determinations with respect to an Acquiring Person or any Affiliates or Associates of an Acquiring Person or any transferee of any of them hereunder.

(f) Notwithstanding anything in this Agreement to the contrary, neither the Rights Agent nor the Company shall be obligated to undertake any action with respect to a registered holder of Rights upon the occurrence of any purported exercise as set forth in this Section 7 unless such registered holder shall have (i) completed and signed the certificate contained in the form of election to purchase set forth on the reverse side of the Right Certificate surrendered for such exercise, and (ii) provided such additional evidence of the identity of the Beneficial Owner (or former Beneficial Owner) or Affiliates or Associates thereof as the Company shall reasonably request.

Section 8. Cancellation and Destruction of Right Certificates. All Right Certificates surrendered for the purpose of exercise, transfer, split up, combination or exchange shall, if surrendered to the Company or any of its agents, be delivered to the Rights Agent for cancellation or in canceled form, or, if surrendered to the Rights Agent, shall be canceled by it,

and no Right Certificates shall be issued in lieu thereof except as expressly permitted by any of the provisions of this Agreement. The Company shall deliver to the Rights Agent for cancellation and retirement, and the Rights Agent shall so cancel and retire, any other Right Certificate purchased or acquired by the Company otherwise than upon the exercise thereof. The Rights Agent shall deliver all canceled Right Certificates to the Company.

Section 9. Reservation and Availability of Preferred Stock.

(a) The Company covenants and agrees that it will cause to be reserved and kept available out of its authorized and unissued shares of Preferred Stock or any authorized and issued shares of Preferred Stock held in its treasury, the number of shares of Preferred Stock that will be sufficient to permit the exercise in full of all outstanding and exercisable Rights. Upon the occurrence of any events resulting in an increase in the aggregate number of shares of Preferred Stock issuable upon exercise of all outstanding Rights in excess of the number then reserved, the Company shall make appropriate increases in the number of shares so reserved.

(b) The Company shall use its best efforts to cause, from and after such time as the Rights become exercisable, all shares of Preferred Stock issued or reserved for issuance to be listed, upon official notice of issuance, upon the principal national securities exchange, if any, upon which the Common Stock of the Company is listed or, if the principal market for the Common Stock of the Company is not on any national securities exchange, to be eligible for quotation on the National Association of Securities Dealers Automated Quotation System ("NASDAQ") or any successor thereto or other comparable quotation system.

(c) The Company shall use its best efforts to (i) file, as soon as practicable following the earliest date after the occurrence of a Section 11(a)(ii) Event on which the consideration to be delivered by the Company upon exercise of the Rights has been determined in accordance with Section 11(a)(iii) hereof, or as soon as required by law following the Distribution Date, as the case may be, a registration statement under the Securities Act of 1933, as amended (the "Securities Act"), with respect to the securities purchasable upon exercise of the Rights on an appropriate form, (ii) cause such registration statement to become effective as soon as practicable after such filing and (iii) cause such registration statement to remain effective (with a prospectus that at all times meets the requirements of the Securities Act) until the earlier of (A) the date as of which the Rights are no longer exercisable for such securities or (B) the Expiration Date. The Company will also take such action as may be appropriate under, and which will ensure compliance with, the securities or "blue sky" laws of the various states in connection with the exercisability of the Rights. The Company may temporarily suspend, for a period of time not to exceed ninety (90) days after the date determined in accordance with the provisions of the first sentence of this Section 9(c), the exercisability of the Rights in order to prepare and file such registration statement and permit it to become effective. Upon such suspension, the Company shall issue a public announcement stating that the exercisability of the Rights has been temporarily suspended, as well as a public announcement at such time as the suspension is no longer in effect, in each case with prompt written notice to the Rights Agent. Notwithstanding any such provision of this Agreement to the contrary, the Rights shall not be exercisable in any jurisdiction unless the requisite qualification in such jurisdiction shall have been obtained.

(d) The Company covenants and agrees that it will take all such action as may be necessary to ensure that all shares of Preferred Stock delivered upon the exercise of the Rights shall, at the time of delivery of the certificates or depository receipts for such shares (subject to payment of the Exercise Price), be duly and validly authorized and issued and fully paid and nonassessable.

(e) The Company further covenants and agrees that it will pay when due and payable any and all federal and state transfer taxes and charges which may be payable in respect of the issuance or delivery of the Right Certificates or of any certificates for shares of Preferred Stock and/or other property upon the exercise of Rights. The Company shall not, however, be required to pay any transfer tax which may be payable in respect of any transfer or delivery of Right Certificates or the issuance or delivery of other securities or property to a person other than, or in respect of the issuance or delivery of securities or other property in a name other than that of, the registered holder of the Right Certificates evidencing Rights surrendered for exercise or to issue or deliver any certificates for securities or other property in a name other than that of the registered holder upon the exercise of any Rights until such tax shall have been paid (any such tax being payable by the holder of such Right Certificate at the time of surrender) or until it has been established to the Company's satisfaction that no such tax is due.

Section 10. Preferred Stock Record Date. Each Person in whose name any certificate for Preferred Stock or other securities (including any fraction of a share of Preferred Stock or such other securities) is issued upon the exercise of Rights shall for all purposes be deemed to have become the holder of record of the shares of Preferred Stock or such other securities represented thereby on, and such certificate shall be dated, the date upon which the Right Certificate evidencing such Rights was duly surrendered and payment of the Exercise Price (and any applicable transfer taxes) was made; provided, however, that if the date of such surrender and payment is a date upon which the transfer books of the Company for the Preferred Stock or such other securities, as applicable, are closed, such person shall be deemed to have become the record holder of such shares of Preferred Stock or such other securities on, and such certificate shall be dated, the next succeeding Business Day on which the transfer books of the Company are open; and further provided, however, that if delivery of shares of Preferred Stock or such other securities is delayed pursuant to Section 9(c), such Person shall be deemed to have become the record holder of such shares of Preferred Stock or such other securities only when such shares or such other securities first become deliverable. Prior to the exercise of the Right evidenced thereby, the holder of a Right Certificate shall not be entitled to any rights of a shareholder of the Company with respect to shares for which the Rights shall be exercisable, including, without limitation, the right to vote, to receive dividends or other distributions or to exercise any preemptive rights, and shall not be entitled to receive any notice of any proceedings of the Company, except as provided herein.

Section 11. Adjustment of Exercise Price, Number and Kind of Shares or Number of Rights. The Exercise Price, the number and kind of shares covered by each Right and the number of Rights outstanding are subject to adjustment from time to time as provided in this Section 11.

(a) (i) In the event the Company shall at any time after the date of this Agreement (A) declare a dividend on the Preferred Stock payable in shares of Preferred Stock,

(B) subdivide the outstanding Preferred Stock, (C) combine the outstanding Preferred Stock into a smaller number of shares or (D) issue, change or alter any shares of its capital stock in a reclassification or recapitalization of the Preferred Stock (including any such reclassification or recapitalization in connection with a consolidation or merger in which the Company is the continuing or surviving Person), except as otherwise provided in this Section 11(a) and Section 7(e) hereof, the Exercise Price in effect at the time of the record date for such dividend or the effective time of such subdivision, combination, reclassification or recapitalization, and the number and kind of shares of capital stock issuable on such date or at such time, shall be proportionately adjusted so that the holder of any Right exercised after such time shall be entitled to receive the aggregate number and kind of shares of capital stock which, if such Right had been exercised immediately prior to such date and at a time when the Preferred Stock transfer books of the Company were open, such holder would have owned upon such exercise and been entitled to receive by virtue of such dividend, subdivision, combination, reclassification or recapitalization; provided, however, that in no event shall the consideration to be paid upon the exercise of a Right be less than the aggregate par value of the shares of capital stock of the Company issuable upon exercise of a Right. If an event occurs which would require an adjustment under both Section 11(a)(i) and Section 11(a)(ii) hereof, the adjustment provided for in this Section 11(a)(i) shall be in addition to, and shall be made prior to, any adjustment required pursuant to Section 11(a)(ii) hereof.

(ii) Subject to the provisions of Section 24 hereof, in the event any Person, alone or together with its Affiliates and Associates, shall become an Acquiring Person, then, promptly following any such occurrence (a "Section 11(a)(ii) Event"), proper provision shall be made so that each holder of a Right, except as provided in Section 7(e) hereof, shall thereafter have a right to receive, upon exercise thereof at the then current Exercise Price in accordance with the terms of this Agreement, in lieu of a number of one ten-thousandths of a share of Preferred Stock, such number of shares of Common Stock of the Company as shall equal the result obtained by (x) multiplying the then current Exercise Price by the then number of one ten-thousandths of a share of Preferred Stock for which a Right was exercisable immediately prior to the first occurrence of a Section 11(a)(ii) Event, whether or not such Right was then exercisable, and dividing that product by (y) 50% of the Fair Market Value per share of Common Stock of the Company (determined pursuant to Section 11(d)) on the date of the occurrence of a Section 11(a)(ii) Event (such number of shares being referred to as the "Adjustment Shares").

(iii) In lieu of issuing any shares of Common Stock of the Company in accordance with Section 11(a)(ii) hereof, the Company, acting by or pursuant to a resolution of the Board of Directors of the Company, may, and in the event that the number of shares of Common Stock of the Company which are authorized by the Company's Certificate of Incorporation but not outstanding or reserved for issuance for purposes other than upon exercise of the Rights is not sufficient to permit the exercise in full of the Rights in accordance with the foregoing subparagraph (ii) of this Section 11(a), the Company, acting by or pursuant to a resolution of the Board of Directors of the Company, shall: (A) determine the excess of (X) the Fair Market Value of the Adjustment Shares issuable upon the exercise of a Right (the "Current Value") over (Y) the Exercise Price attributable to each Right (such excess being referred to as the

“Spread”) and (B) with respect to all or a portion of each Right (subject to Section 7(e) hereof), make adequate provision to substitute for the Adjustment Shares, upon payment of the applicable Exercise Price, (1) Common Stock of the Company or equity securities, if any, of the Company other than Common Stock of the Company (including without limitation shares, or units of shares, of Preferred Stock that the Board of Directors of the Company has determined to have the same value as shares of Common Stock of the Company (such shares of Preferred Stock being referred to herein as “Common Stock Equivalents”), (2) cash, (3) a reduction in the Exercise Price, (4) Preferred Stock Equivalents which the Board of Directors of the Company has deemed to have the same value as shares of Common Stock of the Company, (5) debt securities of the Company, (6) other assets or securities of the Company or (7) any combination of the foregoing, having an aggregate value equal to the Current Value, where such aggregate value has been determined by the Board of Directors of the Company after receiving the advice of a nationally recognized investment banking firm selected by the Board of Directors of the Company; provided, however, that if the Company shall not have made adequate provision to deliver value pursuant to clause (B) above within thirty (30) days following the later of (x) the first occurrence of a Section 11(a)(ii) Event and (y) the date on which the Company’s right of redemption pursuant to Section 23(a) expires (the later of (x) and (y) being referred to herein as the “Section 11(a)(ii) Trigger Date”), then the Company shall be obligated to deliver, upon the surrender for exercise of a Right and without requiring payment of the Exercise Price, shares of Common Stock of the Company (to the extent available) and then, if necessary, cash, which shares and/or cash have an aggregate value equal to the Spread. If the Board of Directors of the Company shall determine in good faith that it is likely that sufficient additional shares of Common Stock of the Company could be authorized for issuance upon exercise in full of the Rights, the 30-day period set forth above may be extended to the extent necessary, but not more than ninety (90) days after the Section 11(a)(ii) Trigger Date, in order that the Company may seek shareholder approval for the authorization of such additional shares (such period, as it may be extended, being referred to herein as the “Substitution Period”). To the extent that the Company determines that some action need be taken pursuant to the first and/or second sentences of this Section 11(a)(iii), the Company (x) shall provide, subject to Section 7(e) hereof, that such action shall apply uniformly to all outstanding Rights and (y) may suspend the exercisability of the Rights until the expiration of the Substitution Period in order to seek any authorization of additional shares and/or to decide the appropriate form of distribution to be made pursuant to such first sentence and to determine the value thereof. In the event of any such suspension, the Company shall issue a public announcement stating that the exercisability of the Rights has been temporarily suspended and a public announcement at such time as the suspension is no longer in effect. For purposes of this Section 11(a)(iii), the value of the Common Stock of the Company and of the Preferred Stock shall be the Fair Market Value (as determined pursuant to Section 11(d) hereof) per share of the Common Stock of the Company and the Preferred Stock, respectively, on the Section 11(a)(ii) Trigger Date, the value of any Common Stock Equivalent shall be deemed to have the same value as the Common Stock of the Company on such date and the value of any Preferred Stock Equivalent shall be deemed to have the same value as the Preferred Stock on such date.

(b) If the Company shall fix a record date for the issuance of rights, options or warrants to all holders of Preferred Stock entitling them (for a period expiring within forty-five (45) calendar days after such record date) to subscribe for or purchase Preferred Stock (or securities having the same or more favorable rights, privileges and preferences as the shares of Preferred Stock (“Preferred Stock Equivalents”)) or securities convertible into Preferred Stock or Preferred Stock Equivalents at a price per share of Preferred Stock or per share of Preferred Stock Equivalents (or having a conversion price per share, if a security convertible into Preferred Stock or Preferred Stock Equivalents) less than the Fair Market Value (as determined pursuant to Section 11(d) hereof) per share of Preferred Stock on such record date, the Exercise Price to be in effect after such record date shall be determined by multiplying the Exercise Price in effect immediately prior to such record date by a fraction, the numerator of which shall be the number of shares of Preferred Stock outstanding on such record date, plus the number of shares of Preferred Stock which the aggregate offering price of the total number of shares of Preferred Stock and/or Preferred Stock Equivalents to be offered (and the aggregate initial conversion price of the convertible securities so to be offered) would purchase at such Fair Market Value and the denominator of which shall be the number of shares of Preferred Stock outstanding on such record date, plus the number of additional shares of Preferred Stock and Preferred Stock Equivalents to be offered for subscription or purchase (or into which the convertible securities so to be offered are initially convertible); provided, however, that in no event shall the consideration to be paid upon the exercise of a Right be less than the aggregate par value of the shares of stock of the Company issuable upon exercise of a Right. In case such subscription price may be paid in a consideration part or all of which shall be in a form other than cash, the value of such consideration shall be the Fair Market Value thereof determined in accordance with Section 11(d) hereof. Shares of Preferred Stock owned by or held for the account of the Company shall not be deemed outstanding for the purpose of any such computation. Such adjustments shall be made successively whenever such a record date is fixed; and in the event that such rights or warrants are not so issued, the Exercise Price shall be adjusted to be the Exercise Price which would then be in effect if such record date had not been fixed.

(c) If the Company shall fix a record date for the making of a distribution to all holders of Preferred Stock (including any such distribution made in connection with a consolidation or merger in which the Company is the continuing or surviving corporation), of evidences of indebtedness, cash (other than a regular periodic cash dividend out of the earnings or retained earnings of the Company), assets (other than a dividend payable in Preferred Stock, but including any dividend payable in stock other than Preferred Stock) or convertible securities, subscription rights or warrants (excluding those referred to in Section 11(b)), the Exercise Price to be in effect after such record date shall be determined by multiplying the Exercise Price in effect immediately prior to such record date by a fraction, the numerator of which shall be the Fair Market Value (as determined pursuant to Section 11(d) hereof) per one ten-thousandth of a share of Preferred Stock on such record date, less the Fair Market Value (as determined pursuant to Section 11(d) hereof) of the portion of the cash, assets or evidences of indebtedness so to be distributed or of such convertible securities, subscription rights or warrants applicable to one ten-thousandth of a share of Preferred Stock and the denominator of which shall be the Fair Market Value (as determined pursuant to Section 11(d) hereof) per one ten-thousandth of a share of Preferred Stock; provided, however, that in no event shall the consideration to be paid upon the exercise of a Right be less than the aggregate par value of the shares of stock of the Company issuable upon exercise of a Right. Such adjustments shall be made successively whenever such a record date is fixed; and in the event that such distribution is not so made, the Exercise Price shall again be adjusted to be the Exercise Price which would be in effect if such record date had not been fixed.

(d) For the purpose of this Agreement, the “Fair Market Value” of any share of Preferred Stock, Common Stock or any other stock or any Right or other security or any other property shall be determined as provided in this Section 11(d).

(i) In the case of a publicly-traded stock or other security, the Fair Market Value on any date shall be deemed to be the average of the daily closing prices per share of such stock or per unit of such other security for the 30 consecutive Trading Days (as such term is hereinafter defined) immediately prior to such date; provided, however, that in the event that the Fair Market Value per share of any share of stock is determined during a period following the announcement by the issuer of such stock of (x) a dividend or distribution on such stock payable in shares of such stock or securities convertible into shares of such stock or (y) any subdivision, combination or reclassification of such stock, and prior to the expiration of the 30 Trading Day period after the ex-dividend date for such dividend or distribution, or the record date for such subdivision, combination or reclassification, then, and in each such case, the Fair Market Value shall be properly adjusted to take into account ex-dividend trading. The closing price for each day shall be the last sale price, regular way, or, in case no such sale takes place on such day, the average of the closing bid and asked prices, regular way, in either case as reported in the principal consolidated transaction reporting system with respect to securities listed or admitted to trading on the New York Stock Exchange or, if the securities are not listed or admitted to trading on the New York Stock Exchange, as reported in the principal consolidated transaction reporting system with respect to securities listed on the principal national securities exchange on which such security is listed or admitted to trading; or, if not listed or admitted to trading on any national securities exchange, the last quoted price (or, if not so quoted, the average of the last quoted high bid and low asked prices) in the over-the-counter market, as reported by NASDAQ or such other system then in use; or, if on any such date no bids for such security are quoted by any such organization, the average of the closing bid and asked prices as furnished by a professional market maker making a market in such security selected by the Board of Directors of the Company. If on any such date no market maker is making a market in such security, the Fair Market Value of such security on such date shall be determined reasonably and with utmost good faith to the holders of the Rights by the Board of Directors of the Company, provided, however, that if at the time of such determination there is an Acquiring Person, the Fair Market Value of such security on such date shall be determined by a nationally recognized investment banking firm selected by the Board of Directors of the Company, which determination shall be described in a statement filed with the Rights Agent and shall be binding on the Rights Agent and the holders of the Rights. The term “Trading Day” shall mean a day on which the principal national securities exchange on which such security is listed or admitted to trading is open for the transaction of business or, if such security is not listed or admitted to trading on any national securities exchange, a Business Day.

(ii) If a security is not publicly held or not so listed or traded, "Fair Market Value" shall mean the fair value per share of stock or per other unit of such security, determined reasonably and in good faith to the holders of the Rights by the Board of Directors of the Company; provided, however, that if at the time of such determination there is an Acquiring Person, the Fair Market Value of such security on such date shall be determined by a nationally recognized investment banking firm selected by the Board of Directors of the Company, which determination shall be described in a statement filed with the Rights Agent and shall be binding on the Rights Agent and the holders of the Rights; provided, however, that for the purposes of making any adjustment provided for by Section 11(a)(ii) hereof, the Fair Market Value of a share of Preferred Stock shall not be less than the product of the then Fair Market Value of a share of Common Stock multiplied by the higher of the then Dividend Multiple or Vote Multiple (as both of such terms are defined in the Certificate of Designations attached as Exhibit A hereto) applicable to the Preferred Stock and shall not exceed 105% of the product of the then Fair Market Value of a share of Common Stock multiplied by the higher of the then Dividend Multiple or Vote Multiple applicable to the Preferred Stock.

(iii) In the case of property other than securities, the Fair Market Value thereof shall be determined reasonably and in good faith to the holders of Rights by the Board of Directors of the Company; provided, however, that if at the time of such determination there is an Acquiring Person, the Fair Market Value of such property on such date shall be determined by a nationally recognized investment banking firm selected by the Board of Directors of the Company, which determination shall be described in a statement filed with the Rights Agent and shall be binding upon the Rights Agent and the holders of the Rights.

(e) Anything herein to the contrary notwithstanding, no adjustment in the Exercise Price shall be required unless such adjustment would require an increase or decrease of at least 1% in the Exercise Price; provided, however, that any adjustments which by reason of this Section 11(e) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations under this Section 11 shall be made to the nearest cent or to the nearest one-millionth of a share of Common Stock of the Company or hundred-millionth of a share of Preferred Stock, as the case may be, or to such other figure as the Board of Directors of the Company may deem appropriate. Notwithstanding the first sentence of this Section 11(e), any adjustment required by this Section 11 shall be made no later than the earlier of (i) three (3) years from the date of the transaction which mandates such adjustment or (ii) the Expiration Date.

(f) If as a result of any provision of Section 11(a) or Section 13(a) hereof, the holder of any Right thereafter exercised shall become entitled to receive any shares of capital stock of the Company other than Preferred Stock, thereafter the number of such other shares so receivable upon exercise of any Right shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the Preferred Stock contained in Section 11(a), (b), (c), (d), (e), (g) through (k) and (m), inclusive, and the provisions of Sections 7, 9, 10, 13 and 14 hereof with respect to the Preferred Stock shall apply on like terms to any such other shares.

(g) All Rights originally issued by the Company subsequent to any adjustment made to the Exercise Price hereunder shall evidence the right to purchase, at the adjusted Exercise Price, the number of one ten-thousandths of a share of Preferred Stock (or other securities or amount of cash or combination thereof) purchasable from time to time hereunder upon exercise of the Rights, all subject to further adjustment as provided herein.

(h) Unless the Company shall have exercised its election as provided in Section 11(i), upon each adjustment of the Exercise Price as a result of the calculations made in Section 11(b) and (c), each Right outstanding immediately prior to the making of such adjustment shall thereafter evidence the right to purchase, at the adjusted Exercise Price, that number of one ten-thousandths of a share of Preferred Stock (calculated to the nearest hundred-millionth) as the Board of Directors of the Company determines is appropriate to preserve the economic value of the Rights, including, by way of example, that number obtained by (i) multiplying (x) the number of one ten-thousandths of a share of Preferred Stock for which a Right may be exercisable immediately prior to this adjustment by (y) the Exercise Price in effect immediately prior to such adjustment of the Exercise Price and (ii) dividing the product so obtained by the Exercise Price in effect immediately after such adjustment of the Exercise Price.

(i) The Company may elect on or after the date of any adjustment of the Exercise Price to adjust the number of Rights, in substitution for any adjustment in the number of shares of Preferred Stock purchasable upon the exercise of a Right. Each of the Rights outstanding after the adjustment in the number of Rights shall be exercisable for the number of one ten-thousandths of a share of Preferred Stock for which a Right was exercisable immediately prior to such adjustment. Each Right held of record prior to such adjustment of the number of Rights shall become that number of Rights (calculated to the nearest one-millionth) obtained by dividing the Exercise Price in effect immediately prior to adjustment of the Exercise Price by the Exercise Price in effect immediately after adjustment of the Exercise Price. The Company shall make a public announcement of its election to adjust the number of Rights, indicating the record date for the adjustment, and, if known at the time, the amount of the adjustment to be made. This record date may be the date on which the Exercise Price is adjusted or any day thereafter, but, if the Right Certificates have been issued, shall be at least ten (10) days later than the date of the public announcement. If Right Certificates have been issued, upon each adjustment of the number of Rights pursuant to this Section 11(i), the Company shall, as promptly as practicable, cause to be distributed to holders of record of Right Certificates on such record date Right Certificates evidencing, subject to Section 14 hereof, the additional Rights to which such holders shall be entitled as a result of such adjustment, or, at the option of the Company, shall cause to be distributed to such holders of record in substitution and replacement for the Right Certificates held by such holders prior to the date of adjustment, and upon surrender thereof, if required by the Company, new Right Certificates evidencing all the Rights to which such holders shall be entitled after such adjustment. Right Certificates so to be distributed shall be issued, executed and countersigned in the manner provided for herein (and may bear, at the option of the Company, the adjusted Exercise Price) and shall be registered in the names of the holders of record of Right Certificates on the record date specified in the public announcement.

(j) Irrespective of any adjustment or change in the Exercise Price or the number of one ten-thousandths of a share of Preferred Stock issuable upon the exercise of the Rights, the Right Certificates theretofore and thereafter issued may continue to express the Exercise Price per share and the number of shares which were expressed in the initial Right Certificates issued hereunder without prejudice to any adjustment or change.

(k) Before taking any action that would cause an adjustment reducing the Exercise Price below the then stated value, if any, of the number of one ten-thousandths of a share of Preferred Stock issuable upon exercise of the Rights, the Company shall take any corporate action which may, in the opinion of its counsel, be necessary in order that the Company may validly and legally issue fully paid and nonassessable shares of Preferred Stock at such adjusted Exercise Price.

(l) In any case in which this Section 11 shall require that an adjustment in the Exercise Price be made effective as of a record date for a specified event, the Company may elect to defer until the occurrence of such event the issuing to the holder of any Right exercised after such record date the number of one ten-thousandths of a share of Preferred Stock or other capital stock or securities of the Company, if any, issuable upon such exercise over and above the number of one ten-thousandths of a share of Preferred Stock and other capital stock or securities of the Company, if any, issuable upon such exercise on the basis of the Exercise Price in effect prior to such adjustment; provided, however, that the Company shall deliver to such holder a due bill or other appropriate instrument evidencing such holder's right to receive such additional shares upon the occurrence of the event requiring such adjustment.

(m) Anything in this Section 11 to the contrary notwithstanding, the Company shall be entitled to make such reductions in the Exercise Price, in addition to those adjustments expressly required by this Section 11, as and to the extent that in its good faith judgment the Board of Directors of the Company shall determine to be advisable in order that any consolidation or subdivision of the Preferred Stock, issuance wholly for cash of any shares of Preferred Stock at less than the Fair Market Value, issuance wholly for cash of shares of Preferred Stock or securities which by their terms are convertible into or exchangeable for shares of Preferred Stock, stock dividends or issuance of rights, options or warrants referred to hereinabove in this Section 11, hereafter made by the Company to holders of its Preferred Stock, shall not be taxable to such shareholders.

(n) The Company covenants and agrees that it shall not, at any time after the Distribution Date and so long as the Rights have not been redeemed pursuant to Section 23 hereof or exchanged pursuant to Section 24 hereof, (i) consolidate with (other than a Subsidiary of the Company in a transaction that complies with the proviso at the end of this sentence), (ii) merge with or into, or (iii) sell or transfer (or permit any Subsidiary to sell or transfer), in one transaction or a series of related transactions, assets or earning power aggregating 50% or more of the assets or earning power of the Company and its Subsidiaries taken as a whole, to any other Person or Persons (other than the Company and/or any of its Subsidiaries in one or more transactions each of which complies with the proviso at the end of this sentence) if (x) at the time of or immediately after such consolidation, merger or sale there are any rights, warrants or other instruments outstanding or agreements or arrangements in effect which would substantially diminish or otherwise eliminate the benefits intended to be afforded by the Rights, or (y) prior to, simultaneously with or immediately after such consolidation, merger or sale the shareholders of a Person who constitutes, or would constitute, the "Principal Party" for the purposes of Section 13(a) hereof shall have received a distribution of Rights previously owned by such Person or any

of its Affiliates and Associates; provided, however, that, subject to the following sentence, this Section 11(n) shall not affect the ability of any Subsidiary of the Company to consolidate with, or merge with or into, or sell or transfer assets or earning power to, any other Subsidiary of the Company. The Company further covenants and agrees that after the Distribution Date it will not, except as permitted by Section 23 or Section 27 hereof, take (or permit any Subsidiary to take) any action if at the time such action is taken it is reasonably foreseeable that such action will substantially diminish or otherwise eliminate the benefits intended to be afforded by the Rights.

(o) Notwithstanding anything in this Agreement to the contrary, in the event the Company shall at any time after the date of this Agreement and prior to the Distribution Date (i) declare or pay any dividend on the outstanding Common Stock of the Company payable in shares of Common Stock of the Company or (ii) effect a subdivision, combination or consolidation of the outstanding shares of Common Stock of the Company (by reclassification or otherwise than by payment of dividends in shares of Common Stock of the Company) into a greater or lesser number of shares of Common Stock of the Company, then in any such case (A) the number of one ten-thousandths of a share of Preferred Stock purchasable after such event upon proper exercise of each Right shall be determined by multiplying the number of one ten-thousandths of a share of Preferred Stock so purchasable immediately prior to such event by a fraction, the numerator of which is the number of shares of Common Stock of the Company outstanding immediately prior to such event and the denominator of which is the number of shares of Common Stock of the Company outstanding immediately after such event, and (B) each share of Common Stock of the Company outstanding immediately after such event shall have issued with respect to it that number of Rights which each share of Common Stock of the Company outstanding immediately prior to such event had issued with respect to it. The adjustments provided for in this Section 11(o) shall be made successively whenever such a dividend is declared or paid or such a subdivision, combination or consolidation is effected.

(p) The exercise of Rights under Section 11(a)(ii) shall only result in the loss of rights under Section 11(a)(ii) to the extent so exercised and neither such exercise nor any exchange of Rights pursuant to Section 24 shall otherwise affect the rights of holders of Right Certificates under this Rights Agreement, including rights to purchase securities of the Principal Party following a Section 13 Event which has occurred or may thereafter occur, as set forth in Section 13 hereof. Upon exercise of a Right Certificate under Section 11(a)(ii), the Rights Agent shall return such Right Certificate duly marked to indicate that such exercise has occurred.

Section 12. Certificate of Adjusted Exercise Price or Number of Shares. Whenever an adjustment is made as provided in Section 11 or Section 13 hereof, the Company shall (a) promptly prepare a certificate setting forth such adjustment and a brief statement of the facts accounting for such adjustment, (b) promptly file with the Rights Agent and with each transfer agent for the Preferred Stock and the Common Stock of the Company a copy of such certificate and (c) mail a brief summary thereof to each holder of a Right Certificate (or, if prior to the Distribution Date, to each holder of a certificate representing shares of Common Stock of the Company) in accordance with Section 26 hereof. The Rights Agent shall be fully protected in relying on any such certificate and on any adjustment contained therein and shall not be deemed to have knowledge of any such adjustment unless and until it shall have received such certificate.

Section 13. Consolidation, Merger or Sale or Transfer of Assets or Earning Power.

(a) In the event that, following the Stock Acquisition Date, directly or indirectly, (x) the Company shall consolidate with, or merge with and into, any other Person (other than a Subsidiary of the Company in a transaction which is not prohibited by Section 11(n) hereof), and the Company shall not be the continuing or surviving corporation of such consolidation or merger, (y) any Person (other than a Subsidiary of the Company in a transaction which is not prohibited by the proviso at the end of the first sentence of Section 11(n) hereof) shall consolidate with the Company, or merge with and into the Company and the Company shall be the continuing or surviving corporation of such merger and, in connection with such merger, all or part of the shares of Common Stock of the Company shall be changed into or exchanged for stock or other securities of any other Person or cash or any other property, or (z) the Company shall sell, mortgage or otherwise transfer (or one or more of its Subsidiaries shall sell, mortgage or otherwise transfer), in one transaction or a series of related transactions, assets or earning power aggregating 50% or more of the assets or earning power of the Company and its Subsidiaries (taken as a whole) to any other Person or Persons (other than the Company or any Subsidiary of the Company in one or more transactions, each of which is not prohibited by the proviso at the end of the first sentence of Section 11(n) hereof), then, and in each such case, proper provision shall be made so that: (i) each holder of a Right, except as provided in Section 7(e) hereof, shall have the right to receive, upon the exercise thereof at the then current Exercise Price in accordance with the terms of this Agreement, such number of validly authorized and issued, fully paid and nonassessable shares of freely tradable Common Stock of the Principal Party (as hereinafter defined in Section 13(b)), free and clear of rights of call or first refusal, liens, encumbrances, transfer restrictions or other adverse claims, as shall be equal to the result obtained by (1) multiplying the then current Exercise Price by the number of one ten-thousandths of a share of Preferred Stock for which a Right is exercisable immediately prior to the first occurrence of a Section 13 Event (without taking into account any adjustment previously made pursuant to Section 11(a)(ii) or 11(a)(iii) hereof), and dividing that product by (2) 50% of the Fair Market Value (determined pursuant to Section 11(d) hereof) per share of the Common Stock of such Principal Party on the date of consummation of such consolidation, merger, sale or transfer; (ii) such Principal Party shall thereafter be liable for, and shall assume, by virtue of such consolidation, merger, sale, mortgage or transfer, all the obligations and duties of the Company pursuant to this Agreement; (iii) the term "Company" shall thereafter be deemed to refer to such Principal Party, it being specifically intended that the provisions of Section 11 hereof shall apply to such Principal Party; and (iv) such Principal Party shall take such steps (including, but not limited to, the reservation of a sufficient number of shares of its Common Stock to permit exercise of all outstanding Rights in accordance with this Section 13(a) and the making of payments in cash and/or other securities in accordance with Section 11(a)(iii) hereof) in connection with such consummation as may be necessary to assure that the provisions hereof shall thereafter be applicable, as nearly as reasonably may be, in relation to its shares of Common Stock thereafter deliverable upon the exercise of the Rights.

(b) "Principal Party" shall mean

(i) in the case of any transaction described in clause (x) or (y) of the first sentence of Section 13(a), the Person that is the issuer of any securities into which shares of Common Stock of the Company are converted in such merger or consolidation, or, if there is more than one such issuer, the issuer of Common Stock that has the highest aggregate Fair Market Value (determined pursuant to Section 11(d)), and if no securities

are so issued, the Person that is the other party to the merger or consolidation, or, if there is more than one such Person, the Person the Common Stock of which has the highest aggregate Fair Market Value (determined pursuant to Section 11(d)); and

(ii) in the case of any transaction described in clause (z) of the first sentence of Section 13(a), the Person that is the party receiving the greatest portion of the assets or earning power transferred pursuant to such transaction or transactions, or, if each Person that is a party to such transaction or transactions receives the same portion of the assets or earning power transferred pursuant to such transaction or transactions or if the Person receiving the largest portion of the assets or earning power cannot be determined, whichever Person the Common Stock of which has the highest aggregate Fair Market Value (determined pursuant to Section 11(d));

provided, however, that in any such case described in clauses (i) or (ii) of Section 13(b) hereof, (1) if the Common Stock of such Person is not at such time and has not been continuously over the preceding 12-month period registered under Section 12 of the Exchange Act ("Registered Common Stock") or such Person is not a corporation, and such Person is a direct or indirect Subsidiary or Affiliate of another Person who has Registered Common Stock outstanding, "Principal Party" shall refer to such other Person; (2) if the Common Stock of such Person is not Registered Common Stock or such Person is not a corporation, and such Person is a direct or indirect Subsidiary of another Person but is not a direct or indirect Subsidiary of another Person which has Registered Common Stock outstanding, "Principal Party" shall refer to the ultimate parent entity of such first-mentioned Person; (3) if the Common Stock of such Person is not Registered Common Stock or such Person is not a corporation, and such Person is directly or indirectly controlled by more than one Person, and one or more of such other Persons has Registered Common Stock outstanding, "Principal Party" shall refer to whichever of such other Persons is the issuer of the Registered Common Stock having the highest aggregate Fair Market Value (determined pursuant to Section 11(d)); and (4) if the Common Stock of such Person is not Registered Common Stock or such Person is not a corporation, and such Person is directly or indirectly controlled by more than one Person, and none of such other Persons has Registered Common Stock outstanding, "Principal Party" shall refer to whichever ultimate parent entity is the corporation having the greatest shareholders' equity or, if no such ultimate parent entity is a corporation, "Principal Party" shall refer to whichever ultimate parent entity is the entity having the greatest net assets.

(c) The Company shall not consummate any such consolidation, merger, sale or transfer unless prior thereto (x) the Principal Party shall have a sufficient number of authorized shares of its Common Stock, which have not been issued or reserved for issuance, to permit the exercise in full of the Rights in accordance with this Section 13, and (y) the Company and each Principal Party and each other Person who may become a Principal Party as a result of such consolidation, merger, sale or transfer shall have executed and delivered to the Rights Agent a supplemental agreement providing for the terms set forth in Section 13(a) and (b) and further providing that, as soon as practicable after the date of any consolidation, merger, sale or transfer of assets mentioned in Section 13(a), the Principal Party at its own expense will:

(i) prepare and file a registration statement under the Securities Act with respect to the Rights and the securities purchasable upon exercise of the Rights on

an appropriate form, cause such registration statement to become effective as soon as practicable after such filing and cause such registration statement to remain effective (with a prospectus that at all times meets the requirements of the Securities Act) until the Expiration Date;

(ii) qualify or register the Rights and the securities purchasable upon exercise of the Rights under the blue sky laws of such jurisdictions as may be necessary or appropriate;

(iii) list (or continue the listing of) the Rights and the securities purchasable upon exercise of the Rights on a national securities exchange or to meet the eligibility requirements for quotation on NASDAQ; and

(iv) deliver to holders of the Rights historical financial statements for the Principal Party and each of its Affiliates which comply in all respects with the requirements for registration on Form 10 under the Exchange Act.

(d) In case the Principal Party which is to be a party to a transaction referred to in this Section 13 has a provision in any of its authorized securities or in its certificate of incorporation or By-laws or other instrument governing its affairs, which provision would have the effect of (i) causing such Principal Party to issue (other than to holders of Rights pursuant to this Section 13), in connection with, or as a consequence of, the consummation of a transaction referred to in this Section 13, shares of Common Stock of such Principal Party at less than the then current Fair Market Value (determined pursuant to Section 11(d)) or securities exercisable for, or convertible into, Common Stock of such Principal Party at less than such Fair Market Value, or (ii) providing for any special payment, tax or similar provisions in connection with the issuance of the Common Stock of such Principal Party pursuant to the provisions of this Section 13, then, in such event, the Company shall not consummate any such transaction unless prior thereto the Company and such Principal Party shall have executed and delivered to the Rights Agent a supplemental agreement providing that the provision in question of such Principal Party shall have been canceled, waived or amended, or that the authorized securities shall be redeemed, so that the applicable provision will have no effect in connection with, or as a consequence of, the consummation of the proposed transaction.

The provisions of this Section 13 shall similarly apply to successive mergers or consolidations or sales or other transfers.

Section 14. Fractional Rights and Fractional Shares.

(a) The Company shall not be required to issue fractions of Rights, except prior to the Distribution Date as provided in Section 11(o) hereof, or to distribute Right Certificates which evidence fractional Rights. If the Company elects not to issue such fractional Rights, the Company shall pay, in lieu of such fractional Rights, to the registered holders of the Right Certificates with regard to which such fractional Rights would otherwise be issuable, an amount in cash equal to the same fraction of the Fair Market Value of a whole Right, as determined pursuant to Section 11(d) hereof.

(b) The Company shall not be required to issue fractions of shares of Preferred Stock (other than fractions which are integral multiples of one ten-thousandth of a share of Preferred Stock) upon exercise of the Rights or to distribute certificates which evidence fractional shares of Preferred Stock (other than fractions which are integral multiples of one ten-thousandth of a share of Preferred Stock). In lieu of fractional shares of Preferred Stock that are not integral multiples of one ten-thousandth of a share of Preferred Stock, the Company may pay to the registered holders of Right Certificates at the time such Rights are exercised as herein provided an amount in cash equal to the same fraction of the Fair Market Value of one ten-thousandth of a share of Preferred Stock. For purposes of this Section 14(b), the Fair Market Value of one ten-thousandth of a share of Preferred Stock shall be determined pursuant to Section 11(d) hereof for the Trading Day immediately prior to the date of such exercise.

(c) The holder of a Right by the acceptance of the Rights expressly waives his right to receive any fractional Rights or any fractional shares upon exercise of a Right, except as permitted by this Section 14.

Section 15. Rights of Action. All rights of action in respect of this Agreement, other than rights of action vested in the Rights Agent pursuant to Sections 18 and 20 hereof, are vested in the respective registered holders of the Right Certificates (or, prior to the Distribution Date, the registered holders of the Common Stock of the Company); and any registered holder of any Right Certificate (or, prior to the Distribution Date, of the Common Stock of the Company), without the consent of the Rights Agent or of the holder of any other Right Certificate (or, prior to the Distribution Date, of the Common Stock of the Company), may, in such registered holder's own behalf and for such registered holder's own benefit, enforce, and may institute and maintain any suit, action or proceeding against the Company to enforce, or otherwise act in respect of, his right to exercise the Right evidenced by such Right Certificate in the manner provided in such Right Certificate and in this Agreement. Without limiting the foregoing or any remedies available to the holders of Rights, it is specifically acknowledged that the holders of Rights would not have an adequate remedy at law for any breach of this Agreement and shall be entitled to specific performance of the obligations hereunder and injunctive relief against actual or threatened violations of the obligations hereunder of any Person subject to this Agreement. Holders of Rights shall be entitled to recover the reasonable costs and expenses, including attorneys' fees, incurred by them in any action to enforce the provisions of this Agreement.

Section 16. Agreement of Right Holders. Every holder of a Right, by accepting the same, consents and agrees with the Company and the Rights Agent and with every other holder of a Right that:

(a) prior to the Distribution Date, each Right will be transferable only simultaneously and together with the transfer of shares of Common Stock of the Company;

(b) after the Distribution Date, the Right Certificates are transferable only on the registry books of the Rights Agent if surrendered at the office or offices of the Rights Agent designated for such purpose, duly endorsed or accompanied by a proper instrument of transfer;

(c) subject to Sections 6(a) and 7(f), the Company and the Rights Agent may deem and treat the person in whose name a Right Certificate (or, prior to the Distribution Date,

the associated certificate representing Common Stock of the Company) is registered as the absolute owner thereof and of the Rights evidenced thereby (notwithstanding any notations of ownership or writing on the Right Certificates or the associated certificate representing Common Stock of the Company made by anyone other than the Company or the Rights Agent) for all purposes whatsoever, and, subject to the last sentence of Section 7(e), neither the Company nor the Rights Agent shall be affected by any notice to the contrary; and

(d) notwithstanding anything in this Agreement to the contrary, neither the Company nor the Rights Agent shall have any liability to any holder of a Right or other Person as the result of its inability to perform any of its obligations under this Agreement by reason of any preliminary or permanent injunction or other order, decree or ruling issued by a court of competent jurisdiction or by a governmental, regulatory or administrative agency or commission, or any statute, rule, regulation or executive order promulgated or enacted by any governmental authority prohibiting or otherwise restraining performance of such obligations; provided, however, that the Company must use its best efforts to have any such order, decree or ruling lifted or otherwise overturned as soon as possible.

Section 17. Right Certificate Holder Not Deemed a Shareholder. No holder, as such, of any Right Certificate shall be entitled to vote, receive dividends or be deemed for any purpose the holder of the shares of Preferred Stock or any other securities of the Company which may at any time be issuable on the exercise of the Rights represented thereby, nor shall anything contained herein or in any Right Certificate be construed to confer upon the holder of any Right Certificate, as such, any of the rights of a shareholder of the Company or any right to vote for the election of directors or upon any matter submitted to shareholders at any meeting thereof, or to give or withhold consent to any corporate action, or to receive notice of meetings or other actions affecting shareholders (except as provided in Section 25 hereof), or to receive dividends or subscription rights, or otherwise, until the Right or Rights evidenced by such Right Certificate shall have been exercised in accordance with the provisions hereof.

Section 18. Concerning the Rights Agent.

(a) The Company agrees to pay to the Rights Agent such compensation as shall be agreed to in writing between the Company and the Rights Agent for all services rendered by it hereunder and, from time to time, on demand of the Rights Agent, its reasonable expenses and attorney fees and disbursements and other disbursements incurred in the administration and execution of this Agreement and the exercise and performance of its duties hereunder. The Company also agrees to indemnify the Rights Agent for, and to hold it harmless against, any loss, liability, or expense, incurred without gross negligence, bad faith or willful misconduct on the part of the Rights Agent, for anything done or omitted by the Rights Agent in connection with the acceptance and administration of this Agreement, including the costs and expenses of defending against any claim of liability arising therefrom, directly or indirectly. The provisions of this Section 18(a) shall survive the expiration of the Rights and the termination of this Agreement.

(b) The Rights Agent shall be protected and shall incur no liability for or in respect of any action taken, suffered or omitted by it in connection with its administration of this Agreement in reliance upon any Right Certificate or certificate representing Common Stock of

the Company, Preferred Stock, or other securities of the Company, instrument of assignment or transfer, power of attorney, endorsement, affidavit, letter, notice, direction, consent, certificate, statement, or other paper or document believed by it in good faith and without negligence to be genuine and to be signed and executed by the proper Person or Persons.

(c) The Rights Agent shall not be liable for consequential damages under any provision of this Agreement or for any consequential damages arising out of any act or failure to act hereunder.

Section 19. Merger or Consolidation or Change of Name of Rights Agent.

(a) Any corporation into which the Rights Agent or any successor Rights Agent may be merged or with which it may be consolidated, or any corporation resulting from any merger or consolidation to which the Rights Agent or any successor Rights Agent shall be a party, or any corporation succeeding to the corporate trust or shareholder services business of the Rights Agent or any successor Rights Agent, shall be the successor to the Rights Agent under this Agreement without the execution or filing of any paper or any further act on the part of any of the parties hereto, provided that such corporation would be eligible for appointment as a successor Rights Agent under the provisions of Section 21 hereof. In case at the time such successor Rights Agent shall succeed to the agency created by this Agreement, any of the Right Certificates shall have been countersigned but not delivered, any such successor Rights Agent may adopt the countersignature of the predecessor Rights Agent and deliver such Right Certificates so countersigned; and in case at that time any of the Right Certificates shall not have been countersigned, any successor Rights Agent may countersign such Right Certificates either in the name of the predecessor or in the name of the successor Rights Agent; and in all such cases such Right Certificates shall have the full force provided in the Right Certificates and in this Agreement.

(b) In case at any time the name of the Rights Agent shall be changed and at such time any of the Right Certificates shall have been countersigned but not delivered, the Rights Agent may adopt the countersignature under its prior name and deliver Right Certificates so countersigned; and in case at that time any of the Right Certificates shall not have been countersigned, the Rights Agent may countersign such Right Certificates either in its prior name or in its changed name; and in all such cases such Right Certificates shall have the full force provided in the Right Certificates and in this Agreement.

Section 20. Duties of Rights Agent. The Rights Agent undertakes the duties and obligations expressly imposed by this Agreement upon the following terms and conditions, by all of which the Company and the holders of Right Certificates, by their acceptance thereof, shall be bound:

(a) The Rights Agent may consult with legal counsel selected by it (who may be legal counsel for the Company), and the opinion of such counsel shall be full and complete authorization and protection to the Rights Agent as to any action taken or omitted by it in good faith and in accordance with such opinion.

(b) Whenever in the performance of its duties under this Agreement the Rights Agent shall deem it necessary or desirable that any fact or matter (including, without limitation, the identity of any Acquiring Person and the determination of "Fair Market Value") be proved or established by the Company prior to taking or suffering any action hereunder, such fact or matter (unless other evidence in respect thereof shall be herein specifically prescribed) may be deemed to be conclusively proved and established by a certificate signed by a person believed by the Rights Agent to be the Chairman of the Board of Directors, a Vice Chairman of the Board of Directors, the President, a Vice President, the Treasurer, any Assistant Treasurer, the Secretary or an Assistant Secretary of the Company and delivered to the Rights Agent. Any such certificate shall be full authorization to the Rights Agent for any action taken or suffered in good faith by it under the provisions of this Agreement in reliance upon such certificate.

(c) The Rights Agent shall be liable hereunder only for its own gross negligence, bad faith or willful misconduct.

(d) The Rights Agent shall not be liable for or by reason of any of the statements of fact or recitals contained in this Agreement or in the Right Certificates (except its countersignature thereof) or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by the Company only.

(e) The Rights Agent shall not be under any responsibility in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution hereof by the Rights Agent) or in respect of the validity or execution of any Right Certificate (except its countersignature thereof); nor shall it be responsible for any breach by the Company of any covenant or condition contained in this Agreement or in any Right Certificate; nor shall it be responsible for any change in the exercisability of the Rights (including the Rights becoming void pursuant to Section 7(e) hereof) or any adjustment required under the provisions of Sections 11, 13 or 23(c) hereof or responsible for the manner, method or amount of any such adjustment or the ascertaining of the existence of facts that would require any such adjustment (except with respect to the exercise of Rights evidenced by Right Certificates after receipt of a certificate describing any such adjustment furnished in accordance with Section 12 hereof), nor shall it be responsible for any determination by the Board of Directors of the Company of the Fair Market Value of the Rights or Preferred Stock pursuant to the provisions of Section 14 hereof; nor shall it by any act hereunder be deemed to make any representation or warranty as to the authorization or reservation of any shares of Common Stock of the Company or Preferred Stock to be issued pursuant to this Agreement or any Right Certificate or as to whether or not any shares of Common Stock of the Company or Preferred Stock will, when so issued, be validly authorized and issued, fully paid and nonassessable.

(f) The Company agrees that it will perform, execute, acknowledge and deliver or cause to be performed, executed, acknowledged and delivered all such further and other acts, instruments and assurances as may reasonably be required by the Rights Agent for the carrying out or performing by the Rights Agent of the provisions of this Agreement.

(g) The Rights Agent is hereby authorized and directed to accept instructions with respect to the performance of its duties hereunder and certificates delivered pursuant to any provision hereof from any person believed by the Rights Agent to be the Chairman of the Board

of Directors, any Vice Chairman of the Board of Directors, the President, a Vice President, the Secretary, an Assistant Secretary, the Treasurer or an Assistant Treasurer of the Company, and is authorized to apply to such officers for advice or instructions in connection with its duties, and it shall not be liable for any action taken or suffered to be taken by it in good faith in accordance with instructions of any such officer. Any application by the Rights Agent for written instructions from the Company may, at the option of the Rights Agent, set forth in writing any action proposed to be taken or omitted by the Rights Agent under this Agreement and the date on or after which such action shall be taken or such omission shall be effective. The Rights Agent shall not be liable for any action taken by, or omission of, the Rights Agent in accordance with a proposal included in such application on or after the date specified in such application (which date shall not be less than five Business Days after the date any officer of the Company actually receives such application, unless any such officer shall have consented in writing to an earlier date) unless, prior to taking any such action (or the effective date in the case of an omission), the Rights Agent shall have received written instructions in response to such application specifying the action to be taken or omitted.

(h) The Rights Agent and any shareholder, director, officer or employee of the Rights Agent may buy, sell or deal in any of the Rights or other securities of the Company or become pecuniarily interested in any transaction in which the Company may be interested, or contract with or lend money to the Company or otherwise act as fully and freely as though it were not the Rights Agent under this Agreement. Nothing herein shall preclude the Rights Agent from acting in any other capacity for the Company or for any other legal entity.

(i) The Rights Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorneys or agents.

(j) No provision of this Agreement shall require the Rights Agent to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder or in the exercise of its rights if there shall be reasonable grounds for believing that repayment of such funds or adequate indemnification against such risk or liability is not reasonably assured to it.

(k) If, with respect to any Right Certificate surrendered to the Rights Agent for exercise or transfer, the certificate attached to the form of assignment or form of election to purchase, as the case may be, has either not been completed or indicates an affirmative response to clause (1) or clause (2) thereof, the Rights Agent shall not take any further action with respect to such requested exercise or transfer without first consulting with the Company.

Section 21. Change of Rights Agent. The Rights Agent or any successor Rights Agent may resign and be discharged from its duties under this Agreement upon thirty (30) days' notice in writing mailed to the Company by first class mail, provided, however, that in the event the transfer agency relationship in effect between the Company and the Rights Agent with respect to the Common Stock of the Company terminates, the Rights Agent will be deemed to have resigned automatically on the effective date of such termination. The Company may remove the Rights Agent or any successor Rights Agent (with or without cause), effective immediately or on a specified date, by written notice given to the Rights Agent or successor Rights Agent, as the

case may be, and to each transfer agent of the Common Stock of the Company and Preferred Stock, and by giving notice to the holders of the Right Certificates by any means reasonably determined by the Company to inform such holders of such removal (including without limitation, by including such information in one or more of the Company's reports to shareholders or reports or filings with the Securities and Exchange Commission). If the Rights Agent shall resign or be removed or shall otherwise become incapable of acting, the Company shall appoint a successor to the Rights Agent. If the Company shall fail to make such appointment within a period of thirty (30) days after giving notice of such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated Rights Agent or by the holder of a Right Certificate (who shall, with such notice, submit his Right Certificate for inspection by the Company), then the incumbent Rights Agent or the registered holder of any Right Certificate may apply to any court of competent jurisdiction for the appointment of a new Rights Agent. Any successor Rights Agent, whether appointed by the Company or by such a court, shall be (a) a corporation organized and doing business under the laws of the United States, the State of Delaware or the State of New York (or of any other state of the United States so long as such corporation is authorized to do business as a banking institution in the State of Delaware or the State of New York), in good standing, which is authorized under such laws to exercise stock transfer or corporate trust powers and is subject to supervision or examination by federal or state authority and which has at the time of its appointment as Rights Agent a combined capital and surplus of at least \$10,000,000 or (b) an Affiliate of a Person described in clause (a) of this sentence. After appointment, the successor Rights Agent shall be vested with the same powers, rights, duties and responsibilities as if it had been originally named as Rights Agent without further act or deed; but the predecessor Rights Agent shall deliver and transfer to the successor Rights Agent any property at the time held by it hereunder, and execute and deliver any further assurance, conveyance, act or deed necessary for the purpose. Not later than the effective date of any such appointment, the Company shall file notice thereof in writing with the predecessor Rights Agent and each transfer agent of the Common Stock of the Company and the Preferred Stock, and give notice to the holders of the Right Certificates by any means reasonably determined by the Company to inform such holders of such appointment (including without limitation, by including such information in one or more of the Company's reports to shareholders or reports or filings with the Securities and Exchange Commission). Failure to give any notice provided for in this Section 21, however, or any defect therein, shall not affect the legality or validity of the resignation or removal of the Rights Agent or the appointment of the successor Rights Agent, as the case may be.

Section 22. Issuance of New Right Certificates. Notwithstanding any of the provisions of this Agreement or of the Rights to the contrary, the Company may, at its option, issue new Right Certificates evidencing Rights in such form as may be approved by the Board of Directors of the Company to reflect any adjustment or change in the Exercise Price per share and the number or kind or class of shares of stock or other securities or property purchasable under the Right Certificates made in accordance with the provisions of this Agreement. In addition, in connection with the issuance or sale of shares of Common Stock of the Company following the Distribution Date and prior to the redemption or expiration of the Rights, the Company (a) shall, with respect to shares of Common Stock of the Company so issued or sold pursuant to the exercise of stock options or under any employee plan or arrangement, or upon the exercise, conversion or exchange of securities hereafter issued by the Company, and (b) may, in any other case, if deemed necessary or appropriate by the Board of Directors of the Company, issue Right

Certificates representing the appropriate number of Rights in connection with such issuance or sale; provided, however, that (i) no such Right Certificate shall be issued if, and to the extent that, the Company shall be advised by counsel that such issuance would create a significant risk of material adverse tax consequences to the Company or the person to whom such Right Certificate would be issued, and (ii) no such Right Certificate shall be issued if, and to the extent that, appropriate adjustments shall otherwise have been made in lieu of the issuance thereof.

Section 23. Redemption.

(a) The Board of Directors of the Company may, at its option, redeem all but not less than all of the then outstanding Rights at a redemption price of \$0.01 per Right, appropriately adjusted to reflect any stock dividend declared or paid, any subdivision or combination of the outstanding shares of Common Stock of the Company or any similar event occurring after the date of this Agreement (such redemption price, as adjusted from time to time, being hereinafter referred to as the "Redemption Price"). The Rights may be redeemed only until the earlier to occur of (i) the time at which any Person becomes an Acquiring Person or (ii) the Final Expiration Date.

(b) Immediately upon the action of the Board of Directors of the Company ordering the redemption of the Rights in accordance with Section 23 hereof, and without any further action and without any notice, the right to exercise the Rights will terminate and the only right thereafter of the holders of Rights shall be to receive the Redemption Price for each Right so held. Promptly after the action of the Board of Directors of the Company ordering the redemption of the Rights in accordance with Section 23 hereof, the Company shall give notice of such redemption to the Rights Agent and the holders of the then outstanding Rights by mailing such notice to the Rights Agent and to all such holders at their last addresses as they appear upon the registry books of the Rights Agent or, prior to the Distribution Date, on the registry books of the Transfer Agent for the Common Stock of the Company. Any notice which is mailed in the manner herein provided shall be deemed given, whether or not the holder receives the notice. The Company promptly shall mail a notice of any such exchange to all of the holders of such Rights at their last addresses as they appear upon the registry books of the Rights Agent. Any notice which is mailed in the manner herein provided shall be deemed given, whether or not the holder receives the notice. Each such notice of redemption will state the method by which the payment of the Redemption Price will be made. Neither the Company nor any of its Affiliates or Associates may redeem, acquire or purchase for value any Rights at any time in any manner other than that specifically set forth in this Section 23 or Section 24 hereof or in connection with the purchase of shares of Common Stock of the Company prior to the Distribution Date.

(c) The Company may, at its option, pay the Redemption Price in cash, shares of Common Stock of the Company (based on the Fair Market Value of the Common Stock of the Company as of the time of redemption) or any other form of consideration deemed appropriate by the Board of Directors of the Company.

Section 24. Exchange.

(a) (i) The Board of Directors of the Company may, at its option, at any time on or after the occurrence of a Section 11(a)(ii) Event, exchange all or part of the then

outstanding and exercisable Rights (which shall not include Rights that have become void pursuant to the provisions of Section 7(e) hereof) for shares of Common Stock of the Company at an exchange ratio of one share of Common Stock of the Company per Right, appropriately adjusted to reflect any stock split, stock dividend or similar transaction occurring after the date hereof (such exchange ratio being hereinafter referred to as the "Section 24(a)(i) Exchange Ratio"). Notwithstanding the foregoing, the Board of Directors of the Company shall not be empowered to effect such exchange at any time after any Person (other than an Exempt Person), together with all Affiliates and Associates of such Person, becomes the Beneficial Owner of 50% or more of the Common Stock of the Company.

(ii) Notwithstanding the foregoing, the Board of Directors of the Company may, at its option, at any time on or after the occurrence of a Section 11(a)(ii) Event, exchange all or part of the then outstanding and exercisable Rights (which shall not include Rights that have become null and void pursuant to the provisions of Section 7(e) hereof) for shares of Common Stock of the Company at an exchange ratio specified in the following sentence, as appropriately adjusted to reflect any stock split, stock dividend or similar transaction occurring after the date of this Agreement. Subject to the adjustment described in the foregoing sentence, each Right may be exchanged for that number of shares of Common Stock of the Company obtained by dividing the Spread (as defined in Section 11(a)(iii)) by the then Fair Market Value per one ten-thousandth of a share of Preferred Stock on the earlier of (x) the date on which any person becomes an Acquiring Person or (y) the date on which a tender or exchange offer by any Person (other than an Exempt Person) is first published or sent or given within the meaning of Rule 14d-4(a) of the Exchange Act or any successor rule, if upon consummation thereof such Person could become an Acquiring Person (such exchange ratio being referred to herein as the "Section 24(a)(ii) Exchange Ratio"). Notwithstanding the foregoing, the Board of Directors of the Company shall not be empowered to effect such exchange at any time after any Person (other than an Exempt Person), together with all Affiliates and Associates of such Person, becomes the Beneficial Owner of 50% or more of the Common Stock of the Company.

(b) Immediately upon the action of the Board of Directors of the Company ordering the exchange of any Rights pursuant to subsection (a) of this Section 24 and without any further action and without any notice, the right to exercise such Rights pursuant to Section 11(a)(ii) shall terminate and the only right thereafter of a holder of such Rights shall be to receive that number of shares of Common Stock of the Company equal to the number of such Rights held by such holder multiplied by the Section 24(a)(i) Exchange Ratio or the Section 24(a)(ii) Exchange Ratio, as applicable; provided, however, that the holder of a Right exchanged pursuant to this Section 24 shall continue to have the right to purchase securities or other property of the Principal Party following a Section 13 Event that has occurred or may thereafter occur. The Company shall promptly give notice of any such exchange in accordance with Section 26 hereof and shall promptly mail a notice of any such exchange to all of the holders of such Rights at their last addresses as they appear upon the registry books of the Rights Agent; provided, however, that the failure to give, or any defect in, such notice shall not affect the validity of such exchange. Any notice which is mailed in the manner herein provided shall be deemed given, whether or not the holder receives the notice. Each such notice of exchange will state the method by which the exchange of the shares of Common Stock of the Company for

Rights will be effected and, in the event of any partial exchange, the number of Rights which will be exchanged. Any partial exchange shall be effected pro rata based on the number of Rights (other than Rights which have become null and void pursuant to the provisions of Section 7(e) hereof) held by each holder of Rights.

(c) In any exchange pursuant to this Section 24, the Company, at its option, may substitute Preferred Stock (or Preferred Stock Equivalent, as such term is defined in Section 11(b) hereof) for Common Stock of the Company exchangeable for Rights, at the initial rate of one ten-thousandth of a share of Preferred Stock (or Preferred Stock Equivalent) for each share of Common Stock of the Company, as appropriately adjusted to reflect adjustments in the voting rights of the Preferred Stock pursuant to the terms thereof, so that the fraction of a share of Preferred Stock delivered in lieu of each share of Common Stock of the Company shall have the same voting rights as one share of Common Stock of the Company.

(d) In the event that there shall not be sufficient shares of Common Stock of the Company or Preferred Stock (or Preferred Stock Equivalents) issued but not outstanding or authorized but unissued to permit any exchange of Rights as contemplated in accordance with this Section 24, the Company shall take all such action as may be necessary to authorize additional shares of Common Stock of the Company or Preferred Stock (or Preferred Stock Equivalent) for issuance upon exchange of the Rights.

(e) The Company shall not be required to issue fractions of Common Stock of the Company or to distribute certificates which evidence fractional shares of Common Stock of the Company. If the Company elects not to issue such fractional shares of Common Stock of the Company, the Company shall pay, in lieu of such fractional shares of Common Stock of the Company, to the registered holders of the Right Certificates with regard to which such fractional shares of Common Stock of the Company would otherwise be issuable, an amount in cash equal to the same fraction of the Fair Market Value of a whole share of Common Stock of the Company. For the purposes of this paragraph (e), the Fair Market Value of a whole share of Common Stock of the Company shall be the closing price of a share of Common Stock of the Company (as determined pursuant to the second sentence of Section 11(d)(i) hereof) for the Trading Day immediately prior to the date of exchange pursuant to this Section 24.

Section 25. Notice of Certain Events.

(a) In case the Company shall propose, at any time after the Distribution Date, (i) to pay any dividend payable in stock of any class to the holders of Preferred Stock or to make any other distribution to the holders of Preferred Stock (other than a regular periodic cash dividend out of earnings or retained earnings of the Company), or (ii) to offer to the holders of Preferred Stock rights or warrants to subscribe for or to purchase any additional shares of Preferred Stock or shares of stock of any class or any other securities, rights or options, or (iii) to effect any reclassification of its Preferred Stock (other than a reclassification involving only the subdivision of outstanding shares of Preferred Stock), or (iv) to effect any consolidation or merger into or with, or to effect any sale, mortgage or other transfer (or to permit one or more of its Subsidiaries to effect any sale, mortgage or other transfer), in one transaction or a series of related transactions, of 50% or more of the assets or earning power of the Company and its Subsidiaries (taken as a whole) to, any other Person (other than a Subsidiary of the Company in

one or more transactions each of which is not prohibited by the proviso at the end of the first sentence of Section 11(n) hereof), or (v) to effect the liquidation, dissolution or winding up of the Company, or (vi) to declare or pay any dividend on the Common Stock of the Company payable in Common Stock of the Company or to effect a subdivision, combination or consolidation of the Common Stock of the Company (by reclassification or otherwise than by payment of dividends in Common Stock of the Company) then in each such case, the Company shall give to each holder of a Right Certificate and to the Rights Agent, in accordance with Section 26 hereof, a notice of such proposed action, which shall specify the record date for the purposes of such stock dividend, distribution of rights or warrants, or the date on which such reclassification, consolidation, merger, sale, transfer, liquidation, dissolution, or winding up is to take place and the date of participation therein by the holders of the shares of Common Stock of the Company and/or Preferred Stock, if any such date is to be fixed, and such notice shall be so given in the case of any action covered by clause (i) or (ii) above at least twenty (20) days prior to the record date for determining holders of the shares of Preferred Stock for purposes of such action, and in the case of any such other action, at least twenty (20) days prior to the date of the taking of such proposed action or the date of participation therein by the holders of the shares of Common Stock of the Company and/or Preferred Stock, whichever shall be the earlier; provided, however, no such notice shall be required pursuant to this Section 25 as a result of any Subsidiary of the Company effecting a consolidation or merger with or into, or effecting a sale or other transfer of assets or earnings power to, any other Subsidiary of the Company in a manner not inconsistent with the provisions of this Agreement.

(b) In case any Section 11(a)(ii) Event shall occur, then, in any such case, the Company shall as soon as practicable thereafter give to each registered holder of a Right Certificate and to the Rights Agent, in accordance with Section 26 hereof, a notice of the occurrence of such event, which shall specify the event and the consequences of the event to holders of Rights under Section 11(a)(ii) hereof.

Section 26. Notices. Notices or demands authorized by this Agreement to be given or made by the Rights Agent or by the holder of any Right Certificate to or on the Company shall be sufficiently given or made if sent by first-class mail, postage prepaid, by facsimile transmission or by nationally-recognized overnight courier addressed (until another address is filed in writing with the Rights Agent) as follows:

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, MA 01746
Facsimile No. (508) 429-5732
Attention: Chief Financial Officer

Subject to the provisions of Section 21, any notice or demand authorized by this Agreement to be given or made by the Company or by the holder of any Right Certificate to or on the Rights Agent shall be sufficiently given or made if sent by first-class mail, postage prepaid, by facsimile transmission or by nationally-recognized overnight courier addressed (until another address is filed in writing with the Company) as follows:

Registrar and Transfer Company
10 Commerce Drive
Cranford, NJ 07016
Facsimile No. (908) 497-2310
Attention: Corporate Relations Department

Notices or demands authorized by this Agreement to be given or made by the Company or the Rights Agent to the holder of any Right Certificate (or, prior to the Distribution Date, to the holder of any certificate representing shares of Common Stock of the Company) shall be sufficiently given or made if sent by first-class mail, postage prepaid, addressed to such holder at the address of such holder as shown on the registry books of the Company.

Section 27. Supplements and Amendments. Prior to the occurrence of a Section 11(a)(ii) Event, the Company and the Rights Agent shall, if the Board of Directors of the Company so directs, supplement or amend any provision of this Agreement as the Board of Directors of the Company may deem necessary or desirable without the approval of any holders of certificates representing shares of Common Stock of the Company. From and after the occurrence of a Section 11(a)(ii) Event, the Company and the Rights Agent shall, if the Board of Directors of the Company so directs, supplement or amend this Agreement without the approval of any holder of Right Certificates in order (i) to cure any ambiguity, (ii) to correct or supplement any provision contained herein which may be defective or inconsistent with any other provisions herein, (iii) to shorten or lengthen any time period hereunder, or (iv) to change or supplement the provisions hereof in any manner which the Board of Directors of the Company may deem necessary or desirable and which shall not adversely affect the interests of the holders of Right Certificates (other than an Acquiring Person or any Affiliate or Associate of an Acquiring Person); provided, however, that from and after the occurrence of a Section 11(a)(ii) Event this Agreement may not be supplemented or amended to lengthen, pursuant to clause (iii) of this sentence, (A) a time period relating to when the Rights may be redeemed at such time as the Rights are not then redeemable or (B) any other time period unless such lengthening is for the purpose of protecting, enhancing or clarifying the rights of, and the benefits to, the holders of Rights (other than an Acquiring Person or any Affiliate or Associate of an Acquiring Person). Without limiting the foregoing, the Company may at any time prior to the occurrence of a Section 11(a)(ii) Event amend this Agreement to lower the threshold set forth in Section 1(a) to not less than the greater of (i) the sum of .001% and the largest percentage of the outstanding Common Stock of the Company then known by the Company to be Beneficially Owned by any Person (other than the Company, any Subsidiary of the Company, any employee benefit plan of the Company or any Subsidiary of the Company, or any entity holding Common Stock of the Company for or pursuant to the terms of any such plan) and (ii) 10%. Upon the delivery of such certificate from an appropriate officer of the Company which states that the proposed supplement or amendment is in compliance with the terms of this Section 27, the Rights Agent shall execute such supplement or amendment, and any failure of the Rights Agent to so execute such supplement or amendment shall not affect the validity of the actions taken by the Board of Directors of the Company pursuant to this Section 27. Prior to the occurrence of a Section 11(a)(ii) Event, the interests of the holders of Rights shall be deemed coincident with the interests of the holders of Common Stock of the Company. Notwithstanding any other provision hereof, the Rights Agent's consent must be obtained regarding any amendment or supplement pursuant to this Section 27 which alters the Rights Agent's rights or duties.

Section 28. Successors. All the covenants and provisions of this Agreement by or for the benefit of the Company or the Rights Agent shall bind and inure to the benefit of their respective successors and assigns hereunder.

Section 29. Determinations and Actions by the Board of Directors. The Board of Directors of the Company shall have the exclusive power and authority to administer this Agreement and to exercise all rights and powers specifically granted to the Board of Directors or to the Company, or as may be necessary or advisable in the administration of this Agreement, including without limitation, the right and power to (i) interpret the provisions of this Agreement and (ii) make all determinations and computations deemed necessary or advisable for the administration of this Agreement (including a determination to redeem or not redeem the Rights or to amend the Agreement). All such actions, calculations, interpretations and determinations (including, for purposes of clause (y) below, all omissions with respect to the foregoing) which are done or made by the Board of Directors in good faith shall (x) be final, conclusive and binding on the Company, the Rights Agent, the holders of the Rights and all other parties, and (y) not subject any member of the Board of Directors to any liability to the holders of the Rights or to any other person.

Section 30. Benefits of this Agreement. Nothing in this Agreement shall be construed to give to any person or corporation other than the Company, the Rights Agent and the registered holders of the Right Certificates (and, prior to the Distribution Date, the Common Stock of the Company) any legal or equitable right, remedy or claim under this Agreement; but this Agreement shall be for the sole and exclusive benefit of the Company, the Rights Agent and the registered holders of the Right Certificates (and, prior to the Distribution Date, registered holders of the Common Stock of the Company).

Section 31. Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction or other authority to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions of this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated; provided, however, that notwithstanding anything in this Agreement to the contrary, if any such term, provision, covenant or restriction is held by such court or authority to be invalid, void or unenforceable and the Board of Directors of the Company determines in its good faith judgment that severing the invalid language from the Agreement would adversely affect the purpose or effect of the Agreement, the right of redemption set forth in Section 23 hereof shall be reinstated and shall not expire until the Close of Business on the tenth day following the date of such determination by the Board of Directors.

Section 32. Governing Law. This Agreement, each Right and each Right Certificate issued hereunder shall be deemed to be a contract made under the laws of the State of Delaware and for all purposes shall be governed by and construed in accordance with the laws of such State applicable to contracts to be made and to be performed entirely within such State. The courts of the State of Delaware and of the United States of America located in the State of Delaware (the "Delaware Courts") shall have exclusive jurisdiction over any litigation arising out of or relating to this Agreement and the transactions contemplated hereby, and any Person commencing or otherwise involved in any such litigation shall waive any objection to the laying of venue of such litigation in the Delaware Courts and shall not plead or claim in any Delaware Court that such litigation brought therein has been brought in an inconvenient forum.

Section 33. Counterparts. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument.

Section 34. Descriptive Headings. Descriptive headings of the several Sections of this Agreement are inserted for convenience only and shall not control or affect the meaning or construction of any of the provisions hereof.

Section 35. Force Majeure. Notwithstanding anything to the contrary contained herein, neither the Company nor the Rights Agent shall be liable for any delay or failure in performance resulting directly from any act or event beyond its reasonable control and without the fault or gross negligence of the delayed or non-performing party that causes a sudden, substantial or widespread disruption in business activities, including, without limitation, fire, flood, natural disaster or act of God, strike or other industrial disturbance, war (declared or undeclared), embargo, blockade, legal restriction, riot, insurrection, act of terrorism, disruption in transportation, communications, electric power or other utilities, or other vital infrastructure or any means of disrupting or damaging internet or other computer networks or facilities (each, a "Force Majeure Condition"); provided, that such delayed or non-performing party shall use reasonable commercial efforts to resume performance as soon as practicable. If any Force Majeure Condition occurs, the party delayed or unable to perform shall give immediate written notice to the other party, stating the nature of the Force Majeure Condition and any action being taken to avoid or minimize its effect.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as an instrument under seal and attested, all as of the day and year first above written.

ATTEST:

HARVARD BIOSCIENCE, INC.

By: /s/ Bryce Chicoyne

By: /s/ David Green
Name: David Green
Title: President

ATTEST:

REGISTRAR AND TRANSFER COMPANY,
as Rights Agent

By: /s/ Walter Bruegth

By: /s/ William P. Tatler
Name: William P. Tatler
Title: Vice President

CERTIFICATE OF DESIGNATIONS
of
SERIES A JUNIOR PARTICIPATING CUMULATIVE
PREFERRED STOCK
of
HARVARD BIOSCIENCE, INC.

Section 1. Designation and Amount. The shares of such series shall be designated as “Series A Junior Participating Cumulative Preferred Stock” (the “Series A Preferred Stock”), and the number of shares initially constituting such series shall be 50,000; provided, however, that if more than a total of 50,000 shares of Series A Preferred Stock shall be issuable upon the exercise of Rights (the “Rights”) issued pursuant to the Shareholder Rights Agreement dated as of February 5, 2008, between the Corporation and Registrar and Transfer Company, as Rights Agent (the “Rights Agreement”), the Board of Directors of the Corporation, pursuant to Section 151(g) of the General Corporation Law of the State of Delaware, may direct by resolution or resolutions that a certificate be properly executed, acknowledged, filed and recorded, in accordance with the provisions of Section 103 thereof, providing for the total number of shares of Series A Preferred Stock authorized to be issued to be increased (to the extent that the Certificate of Incorporation then permits) to the largest number of whole shares (rounded up to the nearest whole number) issuable upon exercise of such Rights.

Section 2. Dividends and Distributions.

(A)(i) Subject to the rights of the holders of any shares of any series of preferred stock (or any similar stock) ranking prior and superior to the Series A Preferred Stock with respect to dividends, the holders of shares of Series A Preferred Stock, in preference to the holders of shares of common stock and of any other junior stock, shall be entitled to receive, when, as and if declared by the Board of Directors out of funds legally available for the purpose, quarterly dividends payable in cash on the first day of March, June, September and December in each year (each such date being referred to herein as a “Quarterly Dividend Payment Date”), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or fraction of a share of Series A Preferred Stock, in an amount per share (rounded to the nearest cent) equal to the greater of (a) \$1.00 or (b) subject to the provisions for adjustment hereinafter set forth, 10,000 times the aggregate per share amount of all cash dividends, and 10,000 times the aggregate per share amount (payable in kind) of all non-cash dividends or other distributions other than a dividend payable in shares of common stock or a subdivision of the outstanding shares of common stock (by reclassification or otherwise), declared on the common stock since the immediately preceding Quarterly Dividend Payment Date, or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series A Preferred Stock. The multiple of cash and non-cash dividends declared on the common stock to which holders of the Series A Preferred Stock are entitled, which shall be 10,000 initially but which shall be adjusted from time to time as hereinafter provided, is hereinafter referred to as the “Dividend Multiple.” In the event the Corporation shall at any time after February 5, 2008 (the “Rights Declaration Date”) (i) declare or pay any dividend on common

stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the Dividend Multiple thereafter applicable to the determination of the amount of dividends which holders of shares of Series A Preferred Stock shall be entitled to receive shall be the Dividend Multiple applicable immediately prior to such event multiplied by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

(ii) Notwithstanding anything else contained in this paragraph (A), the Corporation shall, out of funds legally available for that purpose, declare a dividend or distribution on the Series A Preferred Stock as provided in this paragraph (A) immediately after it declares a dividend or distribution on the common stock (other than a dividend payable in shares of common stock); provided that, in the event no dividend or distribution shall have been declared on the common stock during the period between any Quarterly Dividend Payment Date and the next subsequent Quarterly Dividend Payment Date, a dividend of \$1.00 per share on the Series A Preferred Stock shall nevertheless be payable on such subsequent Quarterly Dividend Payment Date.

(B) Dividends shall begin to accrue and be cumulative on outstanding shares of Series A Preferred Stock from the Quarterly Dividend Payment Date next preceding the date of issue of such shares of Series A Preferred Stock, unless the date of issue of such shares is prior to the record date for the first Quarterly Dividend Payment Date, in which case dividends on such shares shall begin to accrue from the date of issue of such shares, or unless the date of issue is a Quarterly Dividend Payment Date or is a date after the record date for the determination of holders of shares of Series A Preferred Stock entitled to receive a quarterly dividend and before such Quarterly Dividend Payment Date, in either of which events such dividends shall begin to accrue and be cumulative from such Quarterly Dividend Payment Date. Accrued but unpaid dividends shall not bear interest. Dividends paid on the shares of Series A Preferred Stock in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at the time outstanding. The Board of Directors may fix in accordance with applicable law a record date for the determination of holders of shares of Series A Preferred Stock entitled to receive payment of a dividend or distribution declared thereon, which record date shall be not more than such number of days prior to the date fixed for the payment thereof as may be allowed by applicable law.

Section 3. Voting Rights. In addition to any other voting rights required by law, the holders of shares of Series A Preferred Stock shall have the following voting rights:

(A) Subject to the provision for adjustment hereinafter set forth, each share of Series A Preferred Stock shall entitle the holder thereof to 10,000 votes on all matters submitted to a vote of the stockholders of the Corporation. The number of votes which a holder of a share of Series A Preferred Stock is entitled to cast, which shall initially be 10,000 but which may be adjusted from time to time as hereinafter provided, is hereinafter referred to as the "Vote Multiple." In the event the Corporation shall at any time after the Rights Declaration Date

(i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the Vote Multiple thereafter applicable to the determination of the number of votes per share to which holders of shares of Series A Preferred Stock shall be entitled shall be the Vote Multiple immediately prior to such event multiplied by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

(B) Except as otherwise provided herein or by law, the holders of shares of Series A Preferred Stock and the holders of shares of common stock and the holders of shares of any other capital stock of this Corporation having general voting rights, shall vote together as one class on all matters submitted to a vote of stockholders of the Corporation.

(C) Except as otherwise required by applicable law or as set forth herein, holders of Series A Preferred Stock shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with holders of common stock as set forth herein) for taking any corporate action.

Section 4. Certain Restrictions.

(A) Whenever dividends or distributions payable on the Series A Preferred Stock as provided in Section 2 are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on shares of Series A Preferred Stock outstanding shall have been paid in full, the Corporation shall not:

(i) declare or pay dividends on, make any other distributions on, or redeem or purchase or otherwise acquire for consideration any shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock;

(ii) declare or pay dividends on or make any other distributions on any shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except dividends paid ratably on the Series A Preferred Stock and all such parity stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

(iii) except as permitted in subsection 4(A)(iv) below, redeem, purchase or otherwise acquire for consideration shares of any stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, provided that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such parity stock in exchange for shares of any stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series A Preferred Stock; or

(iv) purchase or otherwise acquire for consideration any shares of Series A Preferred Stock, or any shares of any stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except in accordance with a purchase offer made in writing or by publication (as determined by the Board of Directors) to all

holders of such shares upon such terms as the Board of Directors, after consideration of the respective annual dividend rates and other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

(B) The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of stock of the Corporation unless the Corporation could, under subsection (A) of this Section 4, purchase or otherwise acquire such shares at such time and in such manner.

Section 5. Reacquired Shares. Any shares of Series A Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired and canceled promptly after the acquisition thereof. All such shares shall upon their cancellation become authorized but unissued shares of preferred stock and may be reissued as part of a new series of preferred stock to be created by resolution or resolutions of the Board of Directors, subject to the conditions and restrictions on issuance set forth herein.

Section 6. Liquidation, Dissolution or Winding Up. Upon any liquidation (voluntary or otherwise), dissolution or winding up of the Corporation, no distribution shall be made (x) to the holders of shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock unless, prior thereto, the holders of shares of Series A Preferred Stock shall have received an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, plus an amount equal to the greater of (1) \$10,000.00 per share or (2) an aggregate amount per share, subject to the provision for adjustment hereinafter set forth, equal to 10,000 times the aggregate amount to be distributed per share to holders of common stock, or (y) to the holders of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except distributions made ratably on the Series A Preferred Stock and all other such parity stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up. In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the aggregate amount per share to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under clause (x) of the preceding sentence shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

Neither the consolidation of nor merging of the Corporation with or into any other corporation or corporations, nor the sale or other transfer of all or substantially all of the assets of the Corporation, shall be deemed to be a liquidation, dissolution or winding up of the Corporation within the meaning of this Section 6.

Section 7. Consolidation, Merger, etc. In case the Corporation shall enter into any consolidation, merger, combination or other transaction in which the shares of common stock are exchanged for or changed into other stock or securities, cash and/or any other property, then in any such case the shares of Series A Preferred Stock shall at the same time be similarly exchanged or changed in an amount per share (subject to the provision for adjustment hereinafter set forth) equal to 10,000 times the aggregate amount of stock, securities, cash and/or any other property (payable in kind), as the case may be, into which or for which each share of common stock is changed or exchanged, plus accrued and unpaid dividends, if any, payable with respect to the Series A Preferred Stock. In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the amount set forth in the preceding sentence with respect to the exchange or change of shares of Series A Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

Section 8. Redemption. The shares of Series A Preferred Stock shall not be redeemable; provided, however, that the foregoing shall not limit the ability of the Corporation to purchase or otherwise deal in such shares to the extent otherwise permitted hereby and by law.

Section 9. Ranking. Unless otherwise expressly provided in the Certificate of Incorporation or a Certificate of Designations relating to any other series of preferred stock of the Corporation, the Series A Preferred Stock shall rank junior to every other series of the Corporation's preferred stock previously or hereafter authorized, as to the payment of dividends and the distribution of assets on liquidation, dissolution or winding up and shall rank senior to the common stock.

Section 10. Amendment. The Certificate of Incorporation and this Certificate of Designations shall not be amended in any manner which would materially alter or change the powers, preferences or special rights of the Series A Preferred Stock so as to affect them adversely without the affirmative vote of the holders of two-thirds or more of the outstanding shares of Series A Preferred Stock, voting separately as a class.

Section 11. Fractional Shares. Series A Preferred Stock may be issued in whole shares or in any fraction of a share that is one ten-thousandth (1/10,000th) of a share or any integral multiple of such fraction, which shall entitle the holder, in proportion to such holder's fractional shares, to exercise voting rights, receive dividends, participate in distributions and to have the benefit of all other rights of holders of Series A Preferred Stock. In lieu of fractional shares, the Corporation may elect to make a cash payment as provided in the Rights Agreement for fractions of a share other than one ten-thousandth (1/10,000th) of a share or any integral multiple thereof.

FORM OF RIGHT CERTIFICATE

Certificate No. R-_____ Rights

NOT EXERCISABLE AFTER FEBRUARY 6, 2018 OR EARLIER IF NOTICE OF REDEMPTION IS GIVEN. THE RIGHTS ARE SUBJECT TO REDEMPTION, AT THE OPTION OF HARVARD BIOSCIENCE, INC., AT \$0.01 PER RIGHT, ON THE TERMS SET FORTH IN THE SHAREHOLDER RIGHTS AGREEMENT BETWEEN HARVARD BIOSCIENCE, INC. AND REGISTRAR AND TRANSFER COMPANY, AS RIGHTS AGENT, DATED AS OF FEBRUARY 5, 2008 (THE "RIGHTS AGREEMENT"). UNDER CERTAIN CIRCUMSTANCES SPECIFIED IN SECTION 7(e) OF THE RIGHTS AGREEMENT, RIGHTS BENEFICIALLY OWNED BY AN ACQUIRING PERSON OR AN ASSOCIATE OR AFFILIATE OF AN ACQUIRING PERSON (AS SUCH TERMS ARE DEFINED IN THE RIGHTS AGREEMENT) AND ANY SUBSEQUENT HOLDER OF SUCH RIGHTS MAY BECOME NULL AND VOID.

Right Certificate

HARVARD BIOSCIENCE, INC.

This certifies that _____, or registered assigns, is the registered owner of the number of Rights set forth above, each of which entitles the owner thereof, subject to the terms, provisions and conditions of the Shareholder Rights Agreement dated as of February 5, 2008 (the "Rights Agreement") between Harvard Bioscience, Inc. (the "Company") and Registrar and Transfer Company, as Rights Agent (the "Rights Agent"), to purchase from the Company at any time after the Distribution Date (as such term is defined in the Rights Agreement) and prior to the close of business on February 6, 2018 at the office or offices of the Rights Agent designated for such purpose, or its successors as Rights Agent, one ten-thousandth of a fully paid, non-assessable share of the Series A Junior Participating Cumulative Preferred Stock (the "Preferred Stock") of the Company, at a purchase price of \$_____per one ten-thousandth of a share (the "Exercise Price"), upon presentation and surrender of this Right Certificate with the Form of Election to Purchase and the related Certificate duly executed. The number of Rights evidenced by this Right Certificate (and the number of shares which may be purchased upon exercise thereof) set forth above, and the Exercise Price per share set forth above, are the number and Exercise Price as of _____, based on the Preferred Stock as constituted at such date.

Upon the occurrence of a Section 11(a)(ii) Event (as such term is defined in the Rights Agreement), if the Rights evidenced by this Right Certificate are beneficially owned by (i) an Acquiring Person or an Affiliate or Associate of any such Person (as such terms are defined in the Rights Agreement), (ii) a transferee of any such Acquiring Person or Associate or Affiliate thereof, or (iii) under certain circumstances specified in the Rights Agreement, a transferee of a Person who, after such transfer, became an Acquiring Person or an Affiliate or Associate of an

Acquiring Person, such Rights shall become null and void and no holder hereof shall have any right with respect to such Rights from and after the occurrence of such Section 11(a)(ii) Event.

As provided in the Rights Agreement, the Exercise Price and the number of shares of Preferred Stock or other securities which may be purchased upon the exercise of the Rights evidenced by this Right Certificate are subject to modification and adjustment upon the happening of certain events.

This Right Certificate is subject to all of the terms, provisions and conditions of the Rights Agreement, which terms, provisions and conditions are hereby incorporated herein by reference and made a part hereof and to which Rights Agreement reference is hereby made for a full description of the rights, limitations of rights, obligations, duties and immunities hereunder of the Rights Agent, the Company and the holders of the Right Certificates, which limitations of rights include the temporary suspension of the exercisability of such Rights under the specific circumstances set forth in the Rights Agreement. Copies of the Rights Agreement are on file at the principal office of the Company and the designated office of the Rights Agent and are also available upon written request to the Company or the Rights Agent.

This Right Certificate, with or without other Right Certificates, upon surrender at the office or offices of the Rights Agent designated for such purpose, may be exchanged for another Right Certificate or Certificates of like tenor and date evidencing Rights entitling the holder to purchase a like aggregate number of shares of Preferred Stock as the Rights evidenced by the Right Certificate or Certificates surrendered shall have entitled such holder to purchase. If this Right Certificate shall be exercised in part, the holder shall be entitled to receive upon surrender hereof another Right Certificate or Certificates for the number of whole Rights not exercised. If this Right Certificate shall be exercised in whole or in part pursuant to Section 11(a)(ii) of the Rights Agreement, the holder shall be entitled to receive this Right Certificate duly marked to indicate that such exercise has occurred as set forth in the Rights Agreement.

Under certain circumstances, subject to the provisions of the Rights Agreement, the Board of Directors of the Company at its option may exchange all or any part of the Rights evidenced by this Certificate for shares of the Company's Common Stock or Preferred Stock at an exchange ratio (subject to adjustment) specified in the Rights Agreement.

Subject to the provisions of the Rights Agreement, the Rights evidenced by this Certificate may be redeemed by the Board of Directors of the Company at its option at a redemption price of \$0.01 per Right (payable in cash, Common Stock or other consideration deemed appropriate by the Board of Directors).

The Company is not obligated to issue fractional shares of stock upon the exercise of any Right or Rights evidenced hereby (other than fractions which are integral multiples of one ten-thousandth of a share of Preferred Stock, which may, at the election of the Company, be evidenced by depositary receipts). If the Company elects not to issue such fractional shares, in lieu thereof a cash payment will be made, as provided in the Rights Agreement.

No holder of this Right Certificate, as such, shall be entitled to vote or receive dividends or be deemed for any purpose the holder of shares of Preferred Stock, Common Stock or any

other securities of the Company which may at any time be issuable on the exercise hereof, nor shall anything contained in the Rights Agreement or herein be construed to confer upon the holder hereof, as such, any of the rights of a shareholder of the Company or any right to vote for the election of directors or upon any matter submitted to shareholders at any meeting thereof, or to give or withhold consent to any corporate action, or to receive notice of meetings or other actions affecting shareholders (except as provided in the Rights Agreement), or to receive dividends or subscription rights, or otherwise, until the Right or Rights evidenced by this Right Certificate shall have been exercised as provided in the Rights Agreement.

This Right Certificate shall not be valid or obligatory for any purpose until it shall have been countersigned by an authorized signatory of the Rights Agent.

WITNESS the facsimile signature of the proper officers of the Company as a document under corporate seal.

Attested: HARVARD BIOSCIENCE, INC.

By: _____
[Secretary or Assistant Secretary]

By: _____
Name: _____
Title: [Chairman, Vice Chairman,
President or Vice President]

Countersigned:

REGISTRAR AND TRANSFER COMPANY

By: _____
Name: _____
Title: _____

[Form of Reverse Side of Right Certificate]

FORM OF ASSIGNMENT

(To be executed by the registered holder if such holder desires to transfer the Right Certificate.)

FOR VALUE RECEIVED _____ hereby sells, assigns and transfers unto _____ (Please print name and address of transferee) _____ this Right Certificate, together with all right, title and interest therein, and does hereby irrevocably constitute and appoint _____ Attorney, to transfer the within Right Certificate on the books of the within-named Company, with full power of substitution.

Dated: _____, _____

Signature

Signature Guaranteed: _____

CERTIFICATE

The undersigned hereby certifies by checking the appropriate boxes that:

(1) the Rights evidenced by this Right Certificate _____ are _____ are not being transferred by or on behalf of a Person who is or was an Acquiring Person or an Affiliate or Associate of any such Person (as such terms are defined in the Rights Agreement); and

(2) after due inquiry and to the best knowledge of the undersigned, the undersigned _____ did _____ did not directly or indirectly acquire the Rights evidenced by this Right Certificate from any Person who is, was or became an Acquiring Person or an Affiliate or Associate of any such Person.

Dated: _____, _____

Signature

NOTICE

The signature to the foregoing Assignment and Certificate must correspond to the name as written upon the face of this Right Certificate in every particular, without alteration or enlargement or any change whatsoever.

FORM OF ELECTION TO PURCHASE

**(To be executed if holder desires to
exercise the Right Certificate.)**

To HARVARD BIOSCIENCE, INC.:

The undersigned hereby irrevocably elects to exercise _____ Rights represented by this Right Certificate to purchase the shares of Preferred Stock issuable upon the exercise of the Rights (or such other securities of the Company or of any other person which may be issuable upon the exercise of the Rights) and requests that certificates for such shares be issued in the name of:

Please insert social security or other identifying taxpayer number: _____

(Please print name and address)

If such number of Rights shall not be all the Rights evidenced by this Right Certificate or if the Rights are being exercised pursuant to Section 11(a)(ii) of the Rights Agreement, a new Right Certificate for the balance of such Rights shall be registered in the name of and delivered to:

Please insert social security or other identifying taxpayer number: _____

(Please print name and address)

Dated: _____, _____

Signature

Signature Guaranteed: _____

CERTIFICATE

The undersigned hereby certifies by checking the appropriate boxes that:

(1) the Rights evidenced by this Right Certificate _____ are _____ are not being exercised by or on behalf of a Person who is or was an Acquiring Person or an Affiliate or Associate of any such Person (as such terms are defined in the Rights Agreement); and

(2) after due inquiry and to the best knowledge of the undersigned, the undersigned _____ did _____ did not directly or indirectly acquire the Rights evidenced by this Right Certificate from any Person who is, was or became an Acquiring Person or an Affiliate or Associate of any such Person.

Dated: _____, _____

Signature

NOTICE

The signature to the foregoing Election to Purchase and Certificate must correspond to the name as written upon the face of this Right Certificate in every particular, without alteration or enlargement or any change whatsoever.