

**AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF**

ACCELERON PHARMA INC. ✓

Acceleron Pharma Inc., a corporation organized and existing under the laws of the state of Delaware, hereby certifies as follows:

1. This Corporation's original Certificate of Incorporation was filed with the Secretary of State of Delaware on June 13, 2003 under the name "phoenix pharma, Inc."
2. This Corporation's Certificate of Incorporation was amended and restated on February 4, 2004.
3. This Corporation's Amended and Restated Certificate of Incorporation was further amended on July 20, 2004 and December 19, 2005.
4. This Amended and Restated Certificate of Incorporation has been duly adopted by this Corporation's Board of Directors and stockholders in accordance with the applicable provisions of Sections 228, 242 and 245 of the General Corporation Law of the State of Delaware.
5. The Certificate of Incorporation of this Corporation is hereby amended and restated to read in full as follows:

FIRST: The name of the corporation (the "Corporation") is Acceleron Pharma Inc.

SECOND: The address of the registered office of the Corporation in the State of Delaware is 2711 Centerville Road, Suite 400, in the City of Wilmington in the County of New Castle, and the name of its registered agent at such address is Corporation Service Company.

THIRD: The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of Delaware.

FOURTH: The total number of shares of all classes of stock which the Corporation has authority to issue is 103,711,980 shares, consisting of 60,000,000 shares of Common Stock, par value \$.001 per share (the "Common Stock"), 26,211,980 shares of Series A Convertible Preferred Stock, par value \$.001 per share (the "Series A Preferred Stock") and 17,500,000 shares of Series B Convertible Preferred Stock, par value \$.001 per share (the "Series B Preferred Stock" and, together with the Series A Preferred Stock, the "Preferred Stock").

State of Delaware
Secretary of State
Division of Corporations
Delivered 01:53 PM 07/28/2006
FILED 01:51 PM 07/28/2006
SRV 060712933 - 3670071 FILE

The powers, preferences and rights, and the qualifications, limitations or restrictions thereof, in respect of each class or series of stock of the Corporation shall be as follows:

Section 1. Liquidation Rights.

(a) Liquidation Payments.

(i) In the event of any liquidation, dissolution or winding up of the affairs of the Corporation, whether voluntary or involuntary, the holders of shares of the Series B Preferred Stock shall be entitled to be paid first out of the assets of the Corporation available for distribution to holders of the Corporation's capital stock of all classes the greater of (A) \$1.85 per share (which amount shall be subject to equitable adjustment whenever there shall occur a stock dividend, stock split, combination of shares, reclassification or other similar event with respect to the Series A Preferred Stock) plus all dividends accrued or declared thereon but unpaid, to and including the date full payment shall be tendered to the holders of the Series B Preferred Stock with respect to such liquidation, dissolution or winding up or (B) such amount per share of Series B Preferred Stock as would have been payable had such share been converted into Common Stock pursuant to the provisions of Section 2 immediately prior to such liquidation, dissolution or winding up.

If the assets of the Corporation shall be insufficient to permit the payment in full to the holders of the Series B Preferred Stock of all amounts so distributable to them, then the entire assets of the Corporation available for such distribution shall be distributed ratably among the holders of the Series B Preferred Stock in proportion to the full preferential amount each such holder is otherwise entitled to receive under this Subsection 1(a)(i).

No payment shall be made with respect to the Series A Preferred Stock and the Common Stock unless and until full payment has been made to the holders of the Series B Preferred Stock of the amounts they are entitled to receive under this Subsection 1(a)(i).

(ii) After such payments shall have been made in full to the holders of the Series B Preferred Stock, or funds necessary for such payments shall have been set aside by the Corporation in trust for the account of holders of Series B Preferred Stock so as to be available for such payments, the holders of shares of the Series A Preferred Stock shall be entitled to be paid first out of the assets of the Corporation available for distribution to holders of the Corporation's capital stock of all classes the greater of (A) \$1.00 per share (which amount shall be subject to equitable adjustment whenever there shall occur a stock dividend, stock split, combination of shares, reclassification or other similar event with respect to the Series A Preferred Stock) plus all dividends accrued or declared thereon but unpaid, to and including the date full payment shall be tendered to the holders of the Series A Preferred Stock with respect to such liquidation, dissolution or winding up or (B) such amount per share of Series A Preferred Stock as would have been payable had such share been converted into Common Stock pursuant to the provisions of Section 2 immediately prior to such liquidation, dissolution or winding up.

If the assets of the Corporation shall be insufficient to permit the payment in full to the holders of the Series A Preferred Stock of all amounts so distributable to them, then the entire

assets of the Corporation available for such distribution shall be distributed ratably among the holders of the Series A Preferred Stock in proportion to the full preferential amount each such holder is otherwise entitled to receive under this Subsection 1(a)(ii).

No payment shall be made with respect to the Common Stock unless and until full payment has been made to the holders of the Series A Preferred Stock of the amounts they are entitled to receive under this Subsection 1(a)(ii).

(ii) After such payments shall have been made in full to the holders of the Series A Preferred Stock, or funds necessary for such payments shall have been set aside by the Corporation in trust for the account of holders of Series A Preferred Stock so as to be available for such payments, ~~the remaining assets~~ available for distribution shall be distributed among the holders of the ~~Common Stock~~ ratably in proportion to the number of shares of Common Stock then held by them.

(iii) Upon conversion of shares of Preferred Stock into shares of Common Stock pursuant to Section 2 below, the holders of such Common Stock shall not be entitled to any preferential payment or distribution in case of any liquidation, dissolution or winding up, but shall share ratably in any distribution of the assets of the Corporation to all the holders of Common Stock.

(iv) The amounts payable with respect to shares of the Series B Preferred Stock and the Series A Preferred Stock under this Subsection 1(a) are sometimes hereinafter referred to as "Series B Liquidation Payments" and the "Series A Liquidation Payments," respectively.

(b) Distributions Other than Cash. Whenever any portion of the distributions provided for in this Section 1 shall be payable in property other than cash, the value of such property shall be the fair market value of such property as determined in good faith by the Board of Directors of the Corporation. The Corporation shall give prompt written notice of such valuation to each holder of the Series B Preferred Stock and the Series A Preferred Stock.

(c) Merger as Liquidation, etc. The merger or consolidation of the Corporation into or with another corporation (except one in which the holders of capital stock of the Corporation immediately prior to such merger or consolidation continue to hold a majority in voting power of the capital stock of the surviving corporation, in which case the provisions of Subsection 2(h) shall apply), the sale of all or substantially all of the assets of the Corporation, or the sale of shares representing 50% or more of the voting power of the Corporation (but excluding bona fide equity financing transactions) shall be deemed to be a liquidation, dissolution or winding up of the affairs of the Corporation for purposes of this Section 1 with respect to the Series B Preferred Stock and Series A Preferred Stock, unless the holders of at least two-thirds of the then outstanding shares of the Series B Preferred Stock and Series A Preferred Stock, respectively, elect to the contrary; such election to be made by giving notice thereof to the Corporation at least three days before the effective date of such event. If such notice is given with respect to the Series B Preferred Stock or Series A Preferred Stock, the

provisions of Subsection 2(h) shall apply to the applicable series of Preferred Stock. Unless such election is made with respect to the Series B Preferred Stock or Series A Preferred Stock, any amounts received by the holders of such Series B Preferred Stock or Series A Preferred Stock as a result of such merger or consolidation shall be deemed to be applied toward, and all consideration received by the Corporation in such asset sale together with all other available assets of the Corporation shall be distributed toward, to the extent necessary, the Series B Liquidation Payments or Series A Liquidation Payments, as applicable.

(d) Notice. In the event the Corporation shall propose to undertake any liquidation, dissolution or winding up of the affairs of the Corporation (including any merger, consolidation or sale of assets which may be deemed to be a liquidation, dissolution or winding up of the affairs of the Corporation under Subsection 1(c)), the Corporation shall, within ten (10) days after the date the Board of Directors approves such action or twenty (20) days prior to any stockholders' meeting called to approve such action, whichever is earlier, give each holder of Series B Preferred Stock and Series A Preferred Stock initial written notice of the proposed action. Such initial written notice shall describe the material terms and conditions of such proposed action, including a description of the stock, cash and property to be received by the holders of the Series B Preferred Stock and Series A Preferred Stock and of Common Stock upon consummation of the proposed action and the proposed date of delivery thereof. If any material change in the facts set forth in the initial notice shall occur, the Corporation shall promptly give each holder of Series B Preferred Stock and Series A Preferred Stock written notice of such material change. The Corporation shall not consummate any such proposed liquidation, dissolution or winding up before the expiration of thirty (30) days after the mailing of the initial notice or twenty (20) days after the mailing of any subsequent written notice, whichever is later, provided that any such 30-day or 20-day period may be shortened or waived upon the written consent of the holders of at least two-thirds of the outstanding shares of each of the Series B Preferred Stock and Series A Preferred Stock. Any holder of outstanding shares of Series B Preferred Stock or Series A Preferred Stock may waive any notice required by this Subsection by a written instrument specifically indicating such waiver.

Section 2. Conversion. The holders of Series B Preferred Stock and Series A Preferred Stock shall have conversion rights as follows (the "Conversion Rights"):

(a) Right to Convert; Conversion Price. Each share of Series B Preferred Stock and Series A Preferred Stock shall be convertible, without the payment of any additional consideration by the holder thereof and at the option of the holder thereof, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for the Series B Preferred Stock and Series A Preferred Stock, into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing \$1.85, in the case of the Series B Preferred Stock, and \$1.00, in the case of the Series A Preferred Stock, (in each case, subject to equitable adjustment whenever there shall occur a change in the capital structure of the Series B Preferred Stock and Series A Preferred Stock, respectively) by the Series B Conversion Price and Series A Conversion Price, respectively, determined as hereinafter provided, in effect at the time of conversion. The Series B Conversion Price and Series A Conversion Price at which shares of Common Stock shall be deliverable upon conversion of Series B Preferred Stock and Series A Preferred Stock, respectively, without the payment of any additional consideration by

the holder thereof (respectively, the "Series B Conversion Price" and "Series A Conversion Price") shall initially be \$1.85 per share of Common Stock for the Series B Preferred Stock and \$1.00 per share of Common Stock for the Series A Preferred Stock. Such initial Series B Conversion Price and Series A Conversion Price shall be subject to adjustment, in order to adjust the number of shares of Common Stock into which the Series B Preferred Stock and Series A Preferred Stock is convertible, as hereinafter provided.

The right of conversion with respect to any shares of Preferred Stock which shall have been called for redemption under Section 6 hereof shall terminate at the close of business on the day fixed for redemption unless the Corporation shall default in the payment of the redemption price, in which case the right of conversion with respect to such shares shall continue unless and until such redemption price is paid in full.

(b) Automatic Conversion.

(i) Each share of Preferred Stock shall automatically be converted into shares of Common Stock at the Series A Conversion Price or Series B Conversion Price, as the case may be, then in effect upon the closing of a firm commitment underwritten public offering lead by a investment banking firm acceptable to the holders of a majority of the then outstanding Series B Preferred Stock pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of Common Stock for the account of the Corporation to the public at an offering price per share of not less than \$3.70 per share, if such public offering is closed on or before July 31, 2008, or \$5.55 per share, if such public offering is closed after July 31, 2008 (in each case as adjusted to reflect any stock dividends, distributions, combinations, reclassifications or other like transactions effected by the Corporation in respect of its Common Stock) and with gross proceeds to the Corporation of not less than \$50,000,000 (prior to underwriters' discounts and commissions) (in the event of which offering, the person(s) entitled to receive the Common Stock issuable upon such conversion of the Preferred Stock shall not be deemed to have converted the Preferred Stock until the closing of such offering).

(ii) Each share of Series A Preferred Stock and Series B Preferred Stock shall automatically be converted into shares of Common Stock at the Series A Conversion Price or Series B Conversion Price then in effect, as the case may be, upon the written election of the holders of at least two-thirds of the then outstanding shares of the Series B Preferred Stock to require such mandatory conversion.

(c) Mechanics of Automatic Conversions. Upon the occurrence of an event specified in Subsection 2(b), the applicable series of Preferred Stock shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Corporation or its transfer agent; *provided*, however, that all holders of shares of Preferred Stock being converted shall be given written notice of the occurrence of the event specified in Subsection 2(b) triggering such conversion, including the date such event occurred (the "Mandatory Conversion Date"), and the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless certificates evidencing such shares of Preferred Stock being converted are either delivered to the Corporation or its transfer agent, or the holder notifies

the Corporation or any transfer agent that such certificates have been lost, stolen, or destroyed and executes an agreement satisfactory to the Corporation to indemnify the Corporation from any loss incurred by it in connection therewith. On the Mandatory Conversion Date, all rights with respect to the applicable series of Preferred Stock so converted shall terminate, except any of the rights of the holder thereof, upon surrender of the holder's certificate or certificates therefor, to receive certificates for the number of shares of Common Stock into which such series of Preferred Stock has been converted, together with cash in an amount equal to all dividends declared but unpaid on, and any and all other amounts owing with respect to, the shares of Preferred Stock converted to and including the time of conversion. Upon the automatic conversion of the Preferred Stock, the holders of such Preferred Stock shall surrender the certificates representing such shares at the office of the Corporation or of its transfer agent. If so required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by the holder's attorney duly authorized in writing. Upon surrender of such certificates there shall be issued and delivered to such holder, or to such holder's nominee or nominees promptly at such office, a certificate or certificates for the number of shares of Common Stock into which the shares of Preferred Stock surrendered were convertible on the date on which such automatic conversion occurred, together with cash in an amount equal to all dividends declared but unpaid on, and any and all other amounts owing with respect to, the shares of Preferred Stock converted to and including the time of conversion. Upon the automatic conversion of the Preferred Stock, all shares of Preferred Stock being converted by any holder thereof shall be aggregated for the purpose of determining the number of shares of Common Stock to which such holder shall be entitled, and no fractional share of Common Stock shall be issued. In lieu of any fractional share to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of the Common Stock on the Mandatory Conversion Date, as reasonably determined by the Board of Directors in good faith.

(d) Mechanics of Optional Conversions. Before any holder of Preferred Stock shall be entitled to convert the same into shares of Common Stock, the holder shall surrender the certificate or certificates therefor at the office of the Corporation or of any transfer agent for the Preferred Stock, and shall give written notice to the Corporation at such office that the holder elects to convert the same and shall state therein the holder's name or the name or names of the holder's nominees in which the holder wishes the certificate or certificates for shares of Common Stock to be issued. On the date of conversion, all rights with respect to the Preferred Stock so converted shall terminate, except any of the rights of the holder thereof, upon surrender of the holder's certificate or certificates therefor, to receive certificates for the number of shares of Common Stock into which such Preferred Stock has been converted and cash in an amount equal to all dividends declared but unpaid on, and any and all other amounts owing with respect to, the shares of Preferred Stock being converted to and including the time of conversion. If so required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by the holder's attorney duly authorized in writing. Upon the optional conversion of the Preferred Stock, all shares of Preferred Stock being converted by any holder thereof shall be aggregated for the purpose of determining the number of shares of Common Stock to which such holder shall be entitled, and no fractional share of Common Stock

shall be issued. In lieu of any fractional share to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of the Common Stock on the date of conversion, as reasonably determined by the Board of Directors in good faith. The Corporation shall, promptly after surrender of the certificate or certificates for conversion, issue and deliver at such office to such holder of Preferred Stock, or to the holder's nominee or nominees, a certificate or certificates for the number of shares of Common Stock to which the holder shall be entitled as aforesaid, together with cash in lieu of any fraction of a share and cash in an amount equal to all dividends declared but unpaid thereon and any and all other amounts owing with respect thereto at such time. Unless otherwise specified by the holder in the written notice of conversion, such conversion shall be deemed to have been made immediately prior to the close of business on the date of such surrender of the shares of Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

(e) Adjustments to Conversion Price for Diluting Issues.

(i) Special Definitions. For purposes of this Subsection 2(e), the following definitions shall apply:

(1) "Option" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Common Stock or Convertible Securities.

(2) "Original Issue Date" shall mean, with respect to the Series A Preferred Stock, the first date on which a share of Series A Preferred Stock was issued and, with respect to the Series B Preferred Stock, the first date on which a share of Series B Preferred Stock was issued.

(3) "Convertible Securities" shall mean any evidences of indebtedness, shares of capital stock (other than Common Stock) or other securities directly or indirectly convertible into or exchangeable for Common Stock.

(4) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to Subsection 2(e)(iii), deemed to be issued) by the Corporation after the applicable Original Issue Date, other than:

(A) shares of Common Stock issued or issuable upon conversion of shares of Series B Preferred Stock and Series A Preferred Stock;

(B) up to 9,400,000 shares of Common Stock issued or issuable to employees, consultants or directors of the Corporation pursuant to (i) the Corporation's 2003 Stock Option and Restricted Stock Plan or (ii) any other stock or employee, consultant or director compensation arrangement (including but not limited to individual option agreements and restricted stock agreements) approved by a majority of the Corporation's Board of Directors, which majority includes a majority of the Preferred Stock Directors (as hereinafter defined); and *provided that* such number may be adjusted upward with

the approval of the holders of at least two-thirds of the Preferred Stock then outstanding as provided in Section 3(a);

(C) shares of Common Stock issued in consideration for the acquisition or licensing of technology or a corporate partnership transaction, if approved by the Board of Directors, including a majority of the Preferred Stock Directors; or

(D) shares of Common Stock issued in equipment leasing or other debt financing transactions, if approved by the Board of Directors, including a majority of the Preferred Stock Directors.

(ii) No Adjustment of Conversion Price. Except as set forth in Subsection 2(e)(vi), no adjustment in the number of shares of Common Stock into which the Preferred Stock is convertible shall be made, by adjustment to the Series B Conversion Price or Series A Conversion Price in respect of the issuance of Additional Shares of Common Stock (a) unless the consideration per share for an Additional Share of Common Stock (determined pursuant to Subsection 2(e)(v)) issued or deemed to be issued by the Corporation is less than the Series B Conversion Price or Series A Conversion Price, respectively, in effect on the date of, and immediately prior to, the issue of such Additional Share of Common Stock or (b) if prior to such issuance or within twenty (20) days thereafter the Corporation receives notice from the holders of at least two-thirds of the outstanding shares of the Series B Preferred Stock or Series A Preferred Stock that no such adjustment in the Series B Conversion Price or Series A Conversion Price, respectively, shall be made.

(iii) Issue of Securities Deemed Issue of Additional Shares of Common Stock.

(1) Options and Convertible Securities. In the event the Corporation at any time or from time to time after the applicable Original Issue Date shall issue any Options (excluding for all purposes of this Subsection 2(e)(iii)(1) Options excluded from the definition of Additional Shares of Common Stock in Subsection 2(e)(i)(4)(B)) or Convertible Securities or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein for a subsequent adjustment of such number) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date, and the Series B Conversion Price or Series A Conversion Price, as applicable, shall be adjusted accordingly, *provided* that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(A) no further adjustment in the Series B Conversion Price or Series A Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(B) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase in the consideration payable to the Corporation, or decrease in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Series B Conversion Price or Series A Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities;

(C) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the Series B Conversion Price or Series A Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(I) In the case of Convertible Securities or Options for Common Stock, the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange; and

(II) in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation (determined pursuant to Subsection 2(e)(v)) upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(D) no readjustment pursuant to clause (B) or (C) above shall have the effect of increasing the Series B Conversion Price or Series A Conversion Price to an amount which exceeds the lower of (i) the Series B Conversion Price or Series A Conversion Price on the original adjustment date, or (ii) the Series B Conversion Price or Series A Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(E) if such record date shall have been fixed and such Options or Convertible Securities are not issued on the date fixed therefor, the adjustment previously made in the Series B Conversion Price or Series A Conversion Price which became effective on such record date shall be canceled as of the close of business on such record date,

and thereafter the Series B Conversion Price or Series A Conversion Price shall be adjusted pursuant to this Subsection 2(e)(iii) as of the actual date of their issuance.

(2) Stock Dividends, Stock Distributions and Subdivisions. In the event the Corporation at any time or from time to time after the Original Issue Date shall declare or pay any dividend or make any other distribution on the Common Stock payable in Common Stock or effect a subdivision of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in Common Stock), then and in any such event, Additional Shares of Common Stock shall be deemed to have been issued with respect to the Series B Preferred Stock and Series A Preferred Stock:

(A) in the case of any such dividend or distribution, immediately after the close of business on the record date for the determination of holders of any class of securities entitled to receive such dividend or distribution, or

(B) in the case of any such subdivision, at the close of business on the date immediately prior to the date upon which such corporate action becomes effective.

If such record date shall have been fixed and no part of such dividend or distribution shall have been paid on the date fixed therefor, the adjustment previously made in the Series B Conversion Price and Series A Conversion Price which became effective on such record date shall be canceled as of the close of business on such record date, and thereafter the Series B Conversion Price and Series A Conversion Price shall be adjusted pursuant to this Subsection 2(e)(iii) as of the time of actual payment of such dividend or distribution.

(iv) Adjustment of Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event that at any time or from time to time after the Original Issue Date the Corporation shall issue Additional Shares of Common Stock (including, without limitation, Additional Shares of Common Stock deemed to be issued pursuant to Subsection 2(e)(iii)(1) but excluding Additional Shares of Common Stock deemed to be issued pursuant to Subsection 2(e)(iii)(2), which event is dealt with in Subsection 2(e)(vi)(1)), without consideration or for a consideration per share less than the Series B Conversion Price or Series A Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, such Series B Conversion Price or Series A Conversion Price, as applicable, shall be reduced, concurrently with such issue, to a price (calculated to the nearest one tenth of one cent) determined in accordance with the following formula:

$$NCP = \frac{(P_1)(Q_1) + (P_2)(Q_2)}{Q_1 + Q_2}$$

where:

NCP = New Series B Conversion Price or new Series A Conversion Price, as applicable;

- P_1 = Series B Conversion Price or Series A Conversion Price, as applicable, in effect immediately prior to new issue;
- Q_1 = Number of shares of Common Stock outstanding, or deemed to be outstanding as set forth below, immediately prior to such issue;
- P_2 = Price per share received by the Corporation upon such issue (calculated in accordance with Subsection 2(e)(v)(2), as applicable);
- Q_2 = Number of shares of Common Stock issued, or deemed to have been issued, in the subject transaction;

provided that for the purpose of this Subsection 2(e)(iv), all shares of Common Stock issuable upon exercise of Options outstanding immediately prior to such issue and conversion of shares of Series B Preferred Stock or Series A Preferred Stock, as applicable, outstanding immediately prior to such issue shall be deemed to be outstanding, and immediately after any Additional Shares of Common Stock are deemed issued pursuant to Subsection 2(e)(iii), such Additional Shares of Common Stock shall be deemed to be outstanding.

(v) Determination of Consideration. For purposes of this Subsection 2(e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(1) Cash and Property: Such consideration shall:

(A) insofar as it consists of cash, be computed at the aggregate amounts of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above, as determined in good faith by the Board of Directors.

(2) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 2(e)(iii)(1), relating to Options and Convertible Securities, shall be determined by dividing (x) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such

consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by (y) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities.

(vi) Adjustment for Dividends, Distributions, Subdivisions, Combinations or Consolidations of Common Stock.

(1) Stock Dividends, Distributions or Subdivisions. In the event the Corporation shall be deemed to issue Additional Shares of Common Stock pursuant to Subsection 2(e)(iii)(2) in a stock dividend, stock distribution or subdivision, the Series B Conversion Price and Series A Conversion Price in effect immediately before such deemed issuance shall, concurrently with the effectiveness of such deemed issuance, be proportionately decreased.

(2) Combinations or Consolidations. In the event the outstanding shares of Common Stock shall be combined or consolidated, by reclassification or otherwise, into a lesser number of shares of Common Stock, the Series B Conversion Price and Series A Conversion Price in effect immediately prior to such combination or consolidation shall, concurrently with the effectiveness of such combination or consolidation, be proportionately increased.

(f) Adjustments for Certain Dividends and Distributions. In the event that at any time or from time to time after the Original Issue Date the Corporation shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock or securities the issuance of which are deemed to be issuances of Common Stock under Subsection 2(e)(iii), then and in each such event provision shall be made so that the holders of Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of securities of the Corporation that they would have received had their Preferred Stock been converted into Common Stock immediately prior to such event and had they thereafter, during the period from the date of such event to and including the conversion date, retained such securities receivable by them as aforesaid during such period, giving application during such period to all adjustments called for herein.

(g) Adjustment for Reclassification, Exchange, or Substitution. In the event that at any time or from time to time after the applicable Original Issue Date the Common Stock issuable upon the conversion of the applicable Preferred Stock shall be changed into the same or a different number of shares of any class or series of stock or other securities or property, whether by capital reorganization, reclassification, recapitalization or otherwise (other than a subdivision or combination of shares or stock dividend provided for above, or a merger, consolidation, or sale of assets provided for below), then and in each such event the holder of any shares of the applicable Preferred Stock shall have the right thereafter to convert such shares

into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, recapitalization or other change by the holder of a number of shares of Common Stock equal to the number of shares of Common Stock into which such shares of the applicable Preferred Stock might have been converted immediately prior to such reorganization, reclassification, recapitalization or change, all subject to further adjustment as provided herein.

(h) Adjustment for Merger, Consolidation or Sale of Assets. In the event that, at any time or from time to time after the applicable Original Issue Date, the Corporation shall merge or consolidate with or into another entity or sell all or substantially all of its assets, and such consolidation, merger or sale is not treated as a liquidation under Subsection 1(c), each share of Preferred Stock shall thereafter be convertible into the kind and amount of shares of stock or other securities or property to which a holder of the number of shares of Common Stock of the Corporation deliverable upon conversion of such Preferred Stock would have been entitled to receive upon such consolidation, merger or sale; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors) shall be made in the application of the provisions set forth in this Section 2 with respect to the rights and interest thereafter of the holders of shares of such Preferred Stock, to the end that the provisions set forth in this Section 2 (including provisions with respect to changes in and other adjustments of the Series B Conversion Price and Series A Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any shares of stock or other securities or property thereafter deliverable upon the conversion of such Preferred Stock.

(i) Special Mandatory Conversion

(i) In the event that any holder of shares of Preferred Stock does not participate in a Qualified Financing (as defined below) by purchasing in the aggregate, in such Qualified Financing and within the time period specified by the Corporation (provided that the Corporation has given such holder at least ten (10) days written notice of the Qualified Financing), such holder's Pro Rata Amount (as defined below), then the Applicable Portion of the shares of Preferred Stock held by such holder shall automatically, and without any further action on the part of such holder, be converted into shares of Common Stock at the applicable Conversion Price in effect immediately prior to the consummation of such Qualified Financing, effective upon, subject to, and concurrently with, the consummation of the Qualified Financing. For purposes of determining the number of shares of Preferred Stock owned by a holder, and for determining the number of Offered Securities a holder of Preferred Stock has purchased in a Qualified Financing, all shares of Preferred Stock held by Affiliates of such holder shall be aggregated with such holder's shares and all Offered Securities purchased by Affiliates of such holder shall be aggregated with the Offered Securities purchased by such holder (provided that no shares or securities shall be attributed to more than one entity or person within any such group of affiliated entities or persons). Any such conversion is sometimes hereinafter referred to as a "Special Mandatory Conversion."

(ii) Upon a Special Mandatory Conversion, each holder of shares of Preferred Stock converted pursuant to Section 2(i)(i) shall surrender his, her or its certificate or certificates for all such shares to the Corporation at the place designated in such notice, and shall

thereafter receive certificates for the number of shares of Common Stock to which such holder is entitled pursuant to this Section 2(i) and a new certificate for the number of shares, if any, of Preferred Stock represented by such surrendered certificate and not converted pursuant to Section 2(i)(i). If so required by the Corporation, certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by the holder's attorney duly authorized in writing. All rights with respect to the Preferred Stock converted pursuant to Section 2(i)(i) shall terminate, except any of the rights of the holder thereof, upon surrender of the holder's certificate or certificates therefor, to receive certificates for the number of shares of Common Stock into which such Preferred Stock has been converted, together with cash in an amount equal to all dividends declared but unpaid on, and any and all other amounts owing with respect to, the shares of Preferred Stock converted to and including the time of conversion, and a new certificate for the number of shares, if any, of Preferred Stock represented by such surrendered certificate and not converted pursuant to Section 2(i)(i). Upon the conversion of shares of Preferred Stock pursuant to Section 2(i)(i), all shares of Preferred Stock of any holder thereof shall be aggregated for the purpose of determining the number of shares of Common Stock to which such holder shall be entitled, and no fractional share of Common Stock shall be issued. In lieu of any fractional share to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of the Common Stock on the date of such conversion, as reasonably determined by the Board of Directors in good faith.

(iii) All certificates evidencing shares of Preferred Stock which are required to be surrendered for conversion in accordance with the provisions hereof shall, from and after the time of the Special Mandatory Conversion, be deemed to have been retired and cancelled, and the shares of Preferred Stock converted pursuant to Section 2(i)(i) represented thereby shall, from and after the time of the Special Mandatory Conversion, be deemed to have been converted into Common Stock for all purposes, notwithstanding the failure of the holder or holders thereof to surrender such certificates on or prior to such date. The Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of the applicable series of Preferred Stock accordingly.

(iv) For purposes of this Section 2(i), the following definitions shall apply:

(1) "Affiliate" shall mean, with respect to any holder of shares of Preferred Stock, any person, entity or firm which, directly or indirectly, controls, is controlled by or is under common control with such holder, including, without limitation, any entity of which the holder is a partner or member, any partner, officer, director, member or employee of such holder and any venture capital fund now or hereafter existing of which the holder is a partner or member which is controlled by or under common control with one or more general partners of such holder or shares the same management company with such holder.

(ii) "Applicable Portion" shall mean, with respect to any holder of shares of Preferred Stock, a number of shares of Preferred Stock calculated by multiplying the

aggregate number of shares of Preferred Stock held by such holder immediately prior to a Qualified Financing by a fraction, the numerator of which is equal to the amount, if positive, by which such holder's Pro Rata Amount exceeds the number of Offered Securities actually purchased by such holder in such Qualified Financing, and the denominator of which is equal to such holder's Pro Rata Amount.

(iii) "Offered Securities" shall mean the equity securities of the Corporation set aside by the Board of Directors for purchase by holders of outstanding shares of Preferred Stock in connection with a Qualified Financing, and offered to such holders.

(iv) "Pro Rata Amount" shall mean, with respect to any holder of Preferred Stock, the lesser of (a) the number of Offered Securities that such holder is entitled to purchase pursuant to Section 3 of the Amended and Restated Investor Rights Agreement dated on or about the Original Issue Date of the Series B Preferred Stock, as amended from time to time (the "Investor Rights Agreement"), or (b) the maximum number of Offered Securities that such holder is permitted by the Corporation to purchase in such Qualified Financing, after giving effect to any cutbacks or limitations established by the Board of Directors or the other parties to the Investor Rights Agreement pursuant to a waiver or modification thereof and applied on a pro rata basis to all holders of Preferred Stock.

(v) "Qualified Financing" shall mean, with respect to the Series B Preferred Stock and Series A Preferred Stock, any transaction involving the issuance or sale of equity securities of the Corporation after the applicable Original Issue Date which would result in the reduction of the Series B Conversion Price or Series A Conversion Price, respectively, pursuant to the terms of this Certificate of Incorporation (giving effect to the operation of Section 2(e)(ii)(b) hereof).

(j) No Impairment. The Corporation shall not, by amendment of its Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation but shall at all times in good faith assist in the carrying out of all the provisions of this Section 2 and in the taking of all such action as may be necessary or appropriate in order to protect the Conversion Rights of the holders of Preferred Stock against impairment.

(k) Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Series B Conversion Price or Series A Conversion Price pursuant to this Section 2, the Corporation at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Series B Preferred Stock or Series A Preferred Stock, as applicable, a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, upon the written request at any time of any holder of Series B Preferred Stock or Series A Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (i) such adjustments and readjustments, (ii) the Series B Conversion Price or Series A Conversion Price, as applicable, at the time in effect, and (iii) the number of shares of Common Stock and the amount, if any, of other property which at the time

would be received upon the conversion of each share of Series B Preferred Stock or Series A Preferred Stock, as applicable.

(l) Notices of Record Date. In the event of any taking by the Corporation of a record of the holders of any class or series of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, the Corporation shall mail to each holder of Preferred Stock at least ten (10) days prior to such record date a notice specifying the date on which any such record is to be taken for the purpose of such dividend or distribution.

(m) Common Stock Reserved. The Corporation shall reserve and keep available, free from pre-emptive rights, out of its authorized but unissued Common Stock, solely for the purpose of effecting the conversion of Preferred Stock, such number of shares of Common Stock as shall from time to time be sufficient to effect conversion of the Preferred Stock. If at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all the then outstanding shares of Preferred Stock, the Corporation shall promptly take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose.

(n) Certain Taxes. The Corporation shall pay any issue or transfer taxes payable in connection with the conversion of Preferred Stock, provided, however, that the Corporation shall not be required to pay any tax which may be payable in respect of any transfer to a name other than that of the holder of the Preferred Stock.

(o) Closing of Books. The Corporation shall at no time close its transfer books against the transfer of any Preferred Stock or of any shares of Common Stock issued or issuable upon the conversion of any shares of Preferred Stock in any manner which interferes with the timely conversion or transfer of such Preferred Stock or Common Stock.

(p) Validity of Shares. The Corporation agrees that it will from time to time take all such actions as may be required to assure that all shares of Common Stock which may be issued upon conversion of any Preferred Stock will, upon issuance, be legally and validly issued, fully paid and nonassessable and free from all taxes, liens and charges with respect to the issue thereof.

Section 3. Restrictions.

(a) In addition to any other vote required by law or this Certificate of Incorporation, without first obtaining the affirmative vote or written consent of the holders of at least two-thirds of the then outstanding shares of Series B Preferred Stock or Series A Preferred Stock, as applicable, the Corporation will not, either directly or by amendment, merger, consolidation or otherwise, amend the preferences, rights or privileges of the Series B Preferred Stock or Series A Preferred Stock, respectively.

(b) In addition to any other vote required by law or this Certificate of Incorporation, without first obtaining the affirmative vote or written consent of the holders of at least two-thirds of the then outstanding shares of Preferred Stock, the Corporation will not, either directly or by amendment, merger, consolidation or otherwise:

(i) amend or repeal any provision of, or add any provision to, the Corporation's Certificate of Incorporation or By-laws;

(ii) authorize or designate any class or series of capital stock having rights senior to or on a parity with the Series B Preferred Stock or Series A Preferred Stock as to dividends, liquidation or otherwise;

(iv) enter into any merger, consolidation, capital reorganization, liquidation or dissolution; sell, lease or otherwise dispose of all or substantially all of the assets of the Corporation or permit any subsidiary to sell, lease or otherwise dispose of all or substantially all of the assets of such subsidiary;

(v) sell, lease or otherwise dispose of any substantial part of the Corporation's assets other than in the ordinary course of business;

(vi) effect any acquisition of the capital stock of another entity that results in the consolidation of that entity into the results of operations of the Corporation;

(vii) acquire another entity in a transaction in which the aggregate consideration paid has a value of more than \$1,000,000;

(viii) incur indebtedness for borrowed funds, in a single or related series of transactions, in principal amount at any time outstanding in excess of \$500,000, except in a transaction approved by a majority of the Preferred Stock Directors;

(ix) create a new plan or arrangement for the grant of stock options, stock appreciation rights, restricted stock or other similar stock-based compensation (other than the Corporation's 2003 Stock Option and Restricted Stock Plan), or increase the number of shares or other rights available under any existing plan or arrangement;

(x) any provision of the By-Laws of the Corporation to the contrary notwithstanding, increase the number of directors constituting the entire Board of Directors; or

(xi) pay or declare any dividend or distribution on any shares of its capital stock (except dividends payable solely in shares of Common Stock), or apply any of its assets to the redemption, retirement, purchase or acquisition, directly or indirectly, through subsidiaries or otherwise, of any shares of its capital stock (except as expressly set forth herein and except for repurchases of Common Stock upon termination of employment or service pursuant to written agreements in effect on the date hereof or written agreements approved by the Corporation's Board of Directors or a committee thereof).

(c) Notwithstanding any other provision of this Certificate of Incorporation or the Corporation's By-Laws to the contrary, written notice of any action specified in Subsection 3(a) shall be given by the Corporation to each holder of outstanding shares of Preferred Stock at least ten (10) days before the date on which the books of the Corporation shall close or a record shall be taken with respect to such proposed action, or, if there shall be no such date, at least ten (10) days before the date when such proposed action is scheduled to take place. Any holder of outstanding shares of Preferred Stock may waive any notice required by this Subsection by a written document specifically indicating such waiver.

Section 4. Voting Rights.

(a) Except as otherwise required by law or set forth in this Certificate of Incorporation, the holders of Preferred Stock shall be entitled to notice of any meeting of stockholders and shall vote together with the holders of Common Stock as a single class upon any matter submitted to the stockholders for a vote. With respect to all questions as to which, under law, stockholders are required to vote by classes or series, the Series B Preferred Stock and Series A Preferred Stock shall vote separately as a single class and series apart from the Common Stock. Shares of Common Stock and Preferred Stock shall entitle the holders thereof to the following number of votes on any matter as to which they are entitled to vote:

(i) Holders of Common Stock shall have one vote per share; and

(ii) Holders of Preferred Stock shall have that number of votes per share as is equal to the number of shares of Common Stock (including fractions of a share) into which each such share of Preferred Stock held by such holder could be converted on the date for determination of stockholders entitled to vote at the meeting or on the date of any written consent.

(b) Any provision of the By-Laws of the Corporation to the contrary notwithstanding, the number of directors (including the Series A Preferred Stock Directors (as defined below)) constituting the whole Board of Directors of the Corporation shall not be fixed at a number greater than ten (10) without the prior written consent of the holders of at least two-thirds of the Preferred Stock then outstanding as provided in Section 3(a) above. The Board of Directors shall not delegate any of its powers or duties to any committee of the Board of Directors without the consent of a majority of the Preferred Stock Directors then in office.

(c) At all times during which shares of Series A Preferred Stock remain outstanding, the holders of the outstanding shares of Series A Preferred Stock shall have the exclusive right, separately from the Common Stock, to elect four directors of the Corporation (the "Series A Preferred Stock Directors"). The Series A Preferred Stock Directors shall be elected by the vote or written consent of the holders of a majority of the outstanding Series A Preferred Stock. If a Series A Preferred Stock Director shall cease to serve as a director for any reason, another director elected by the holders of the Series A Preferred Stock shall replace such director. Any Series A Preferred Stock Director may be removed, with or without cause, and a replacement Series A Preferred Stock Director may be elected in his stead, at any time by the affirmative vote at a meeting duly called for the purpose, or by written consent, of the holders of

a majority of the outstanding Series A Preferred Stock. At all times during which shares of Series B Preferred Stock remain outstanding, the holders of the outstanding shares of Series B Preferred Stock shall have the exclusive right, separately from the Common Stock, to elect one (1) director of the Corporation (the "Series B Preferred Stock Director" and, together with the Series A Preferred Stock Directors, the "Preferred Stock Directors"). The Series B Preferred Stock Director shall be elected by the vote or written consent of the holders of a majority of the outstanding Series B Preferred Stock. If a Series B Preferred Stock Director shall cease to serve as a director for any reason, another director designated by the holders of the outstanding shares of Series B Preferred Stock shall replace such director. Any Series B Preferred Stock Director may be removed, with or without cause, and a replacement Series B Preferred Stock Director may be elected in his stead in accordance with the provisions of this Section, at any time by the affirmative vote at a meeting duly called for the purpose, or by written consent, of the holders of a majority of the outstanding Series B Preferred Stock.

(d) All other directors of the Corporation shall be elected by the holders of the Common Stock and Preferred Stock voting together as a single class, with the holders of Preferred Stock to have that number of votes as is determined in accordance with Section 4(a)(ii).

(e) In addition to any rights which may be available under the Corporation's By-Laws or otherwise under law, the holders of not less than twenty percent (20%) of the outstanding Preferred Stock shall be entitled to call meetings of the stockholders of the Corporation. Within five (5) business days after written application by the holders of not less than twenty percent (20%) of the outstanding Preferred Stock, the President or Secretary, or such other officer of the Corporation as may be authorized in the By-Laws of the Corporation to give notice of meetings of stockholders of the Corporation, shall notify each stockholder of the Corporation entitled to such notice of the date, time, place and purpose of such meeting.

(f) The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of shares of stock of the Corporation representing a majority of the votes represented by all outstanding shares of stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

Section 5. Dividends.

(a) Dividends may be declared and paid on Common Stock from funds lawfully available therefor as and when determined by the Board of Directors of the Corporation; *provided* that (i) no dividends shall be declared or paid on Common Stock until all dividends accrued or declared but unpaid on the Preferred Stock shall have been paid in full and (ii) no dividends shall be declared or paid on the Common Stock or the Series A Preferred Stock until all dividends accrued or declared but unpaid on the Series B Preferred Stock shall have been paid in full; and *provided further* that no dividends shall be declared or paid on shares of Common Stock unless the Corporation shall declare and pay at the same time to each holder of Preferred Stock a dividend equal to the dividend which would have been payable to such holder if the shares of Preferred Stock held by such holder had been converted into Common Stock on the record date for the determination of holders of Common Stock entitled to receive such dividend.

(b) Dividends may be declared and paid on Preferred Stock from funds lawfully available therefor as and when determined by the Board of Directors of the Corporation.

(c) The holders of the Preferred Stock shall be entitled to receive, when and as declared by the Board of Directors, out of ~~any funds legally~~ available therefor, preferential cumulative dividends in cash at the rate of eight percent (8%) per share per annum of the stated value thereof. For such purpose, the "stated value" of each share of Series B Preferred Stock shall be \$1.85 and of each shares of Series A Preferred Stock shall be \$1.00 (which amount, in each case, shall be subject to equitable adjustment whenever there shall occur a stock dividend, stock split, combination of shares, reclassification or similar event with respect to the Series B Preferred Stock or Series A Preferred Stock, respectively). Such dividends shall be cumulative and shall accrue from the Original Issue Date of the Series B Preferred Stock and Series A Preferred Stock, as applicable, whether or not earned or declared and whether or not in any fiscal year there shall be net profits or surplus available for the payment of dividends in such fiscal year, so that if in any fiscal year or years, such dividends are not paid in whole or in part upon the Preferred Stock, the portion of such dividends as shall be unpaid shall accumulate as against the holders of the Common Stock.

(d) At the time of conversion of any shares of Preferred Stock pursuant to Section 2, any dividend accrued but unpaid on such Preferred Stock shall not be paid by the Corporation and shall be deemed forfeited as of the effective date of such conversion.

(e) No dividends shall be declared or paid on the Common Stock or Preferred Stock except as set forth in this Section 5.

Section 6. Redemption.

(a) At the written election of holders of a two-thirds of the outstanding shares of Series B Preferred Stock or Series A Preferred Stock made at any time on or after the date that is 90 days before the fifth anniversary of the Original Issue Date of the Series B Preferred Stock (the "Redemption Election"), the Corporation shall be required to redeem all, but not less than all, of the outstanding shares of Series B Preferred Stock or Series A Preferred Stock, as

applicable, in three equal annual installments, upon the terms set forth in this Section 6. The first installment of such redemption shall occur on a date (the "First Redemption Date") specified in the Redemption Election, which shall be not less than ninety (90) days after the date of the Redemption Election, and the second and third installments of such redemption shall occur on the first and second anniversaries, respectively, of the First Redemption Date. The Corporation shall redeem one-third of the outstanding shares of Series B Preferred Stock or Series A Preferred Stock, as applicable, held by each holder on the First Redemption Date, one-third of the outstanding shares of Series B Preferred Stock or Series A Preferred Stock, as applicable, then held by each holder on the first anniversary thereof and the remaining one-third of such shares of Series B Preferred Stock or Series A Preferred Stock, as applicable, on the second anniversary thereof. On each such redemption date, the holders shall surrender the certificate or certificates for the shares to be redeemed duly endorsed for transfer or with duly executed stock transfer powers sufficient to permit transfer attached, at the offices of the Corporation or of any transfer agent for the applicable Preferred Stock. The Corporation shall, as soon as practicable thereafter, issue and deliver to each holder a certificate or certificates for the balance of the shares not being redeemed. The redemption price per share of Series B Preferred Stock and Series A Preferred Stock shall be equal to (i) \$1.85 for the Series B Preferred Stock and \$1.00 for the Series A Preferred Stock (each as adjusted for any stock dividend, stock split, combination of shares, reclassification or other similar event with respect to the Series B Preferred Stock or Series A Preferred Stock, as applicable) (the "Base Redemption Price") plus all dividends accrued or declared but unpaid on such share on the applicable redemption date plus (ii) an additional amount computed like interest payable on the applicable Base Redemption Price at the rate equal to simple interest of ten percent (10%) per annum from the date of issuance of such share of Series B Preferred Stock or Series A Preferred Stock, as applicable. Notwithstanding the foregoing, if the holders of the Series B Preferred Stock have elected to have their shares of Series B Preferred Stock redeemed in accordance with this Section 6(a), the Corporation shall not redeem any shares of Series A Preferred Stock pursuant to this Section 6(a) on any particular redemption date until the redemption price in respect of all shares of Series B Preferred Stock required to be redeemed on such particular redemption date shall have been paid in full.

(b) Notice of redemption shall be sent by first class mail, postage prepaid, to each holder of record of the Series B Preferred Stock or Series A Preferred Stock, as applicable, not less than thirty days nor more than sixty days prior to the First Redemption Date, at the address of such holder as it appears on the books of the Corporation. Such notice shall set forth (i) the First Redemption Date, the dates of the second and third installments of such redemption, and the place of redemption; and (ii) the number of shares to be redeemed on each date of redemption and the redemption price calculated in accordance with Section 6(a) above, on each such date. The Corporation shall be obligated to redeem the Series B Preferred Stock and Series A Preferred Stock, as applicable, on the dates and in the amounts set forth in the notice; provided, however, that any holder of Series B Preferred Stock or Series A Preferred Stock who is not party to a Redemption Election with respect to such series of Preferred Stock may convert any or all of the shares of such series of Preferred Stock owned by such holder into Common Stock in accordance with Section 4 at any time prior to the date of redemption of such shares. The Corporation, if advised before the close of business on the relevant redemption date by written notice from any holder of record of Preferred Stock to be redeemed, shall credit against the number of shares of Preferred Stock required to be redeemed from such holder, and shall not

redeem, the number of shares of Preferred Stock which shall have been converted by such holder on or before such date and which shall not previously have been credited against any redemption.

(c) If, on or before a redemption date, the funds necessary for such redemption shall have been set aside by the Corporation and deposited with a bank or trust company, in trust for the pro rata benefit of the holders of the Preferred Stock that has been called for redemption, then, notwithstanding that any certificates for shares that have been called for redemption shall not have been surrendered for cancellation, the shares represented thereby shall no longer be deemed outstanding from and after such redemption date, and all rights of holders of such shares so called for redemption shall forthwith, after such redemption date, cease and terminate with respect to such shares, excepting only the right to receive the redemption funds therefor to which they are entitled. Any interest accrued on funds so deposited and unclaimed by stockholders entitled thereto shall be paid to such stockholders at the time their respective shares are redeemed or to the Corporation at the time unclaimed amounts are paid to it. In case the holders of shares of Preferred Stock which shall have been called for redemption shall not, within one year after the final redemption date, claim the amounts so deposited with respect to the redemption thereof, any such bank or trust company shall, upon demand, pay over to the Corporation such unclaimed amounts and thereupon such bank or trust company shall be relieved of all responsibility in respect thereof to such holder and such holder shall look only to the Corporation for the payment thereof. Any funds so deposited with a bank or trust company which shall not be required for such redemption by reason of the exercise subsequent to the date of such deposit of the right of conversion of any shares or otherwise shall be returned to the Corporation forthwith.

(d) If the Corporation for any reason fails to redeem any of the shares of Preferred Stock in accordance with Section 6(a) on or prior to the redemption dates determined in accordance with this Section 6, then, the Corporation shall become obligated to pay, in addition to the total redemption price specified in Section 6(a), interest on the unpaid balance of such price, which shall accrue at a rate equal to the lesser of (i) one percent (1%) per month or (ii) the maximum interest rate allowable under applicable law, until such price is paid in full.

(e) If the funds of the Corporation legally available for redemption of shares of Preferred Stock on a redemption date are insufficient to redeem the total number of shares of Preferred Stock submitted for redemption, those funds which are legally available will be used to redeem the maximum possible number of whole shares ratably among the holders of such shares. The shares of Preferred Stock not redeemed shall remain outstanding and entitled to all rights and preferences provided herein. At any time thereafter when additional funds of the Corporation are legally available for the redemption of such shares of Preferred Stock, such funds will be used, at the end of the next succeeding fiscal quarter, to redeem the balance of such shares, or such portion thereof for which funds are then legally available.

Section 7. No Reissuance of Preferred Stock. No shares of Preferred Stock acquired by the Corporation by reason of redemption, purchase, conversion or otherwise shall be reissued, and all such shares shall be canceled, retired and eliminated from the shares which the Corporation shall be authorized to issue.

Section 8. Residual Rights. All rights accruing to the outstanding shares of the Corporation not expressly provided for to the contrary herein shall be vested in the Common Stock.

Section 9. Notices. All notices required or permitted to be sent pursuant to this Article FOURTH shall be deemed sufficient if contained in a written instrument and delivered in person or duly sent by first-class mail postage prepaid (other than in the case of notices to or from any non-U.S. resident) or by fax or DHL, Federal Express or other recognized express international courier service, addressed to the intended recipient at the recipient's address as it appears on the books of the Corporation.

FIFTH: In furtherance of and not in limitation of powers conferred by statute, it is further provided that:

(a) Subject to the limitations and exceptions, if any, contained in the By-Laws of the Corporation and the requirements of Article FOURTH, Section 3(a) hereof, the By-Laws may be adopted, amended or repealed by the Board of Directors of the Corporation with, and only with, the approval of a majority of the directors then in office;

(b) Elections of directors need not be by written ballot unless, and only to the extent, otherwise provided in the By-Laws;

(c) Subject to any applicable requirements of law, the books of the Corporation may be kept outside the State of Delaware at such locations as may be designated by the Board of Directors or in the By-Laws of the Corporation; and

(d) Except as provided to the contrary in the provisions establishing a class or series of stock, the number of authorized shares of such class or series may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote or written consent of a majority in voting power of the stock of the Corporation entitled to vote, voting together as a single class.

SIXTH: The Corporation shall indemnify each person who at any time is, or shall have been, a director or officer of the Corporation and was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director or officer of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee, or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement incurred in connection with any such action, suit or proceeding, to the maximum extent permitted by the General Corporation Law of the State of Delaware, as the same exists or may hereafter be amended. In furtherance of and not in limitation of the foregoing, the Corporation shall advance expenses, including attorneys' fees, incurred by an officer or director of the Corporation in defending any civil, criminal, administrative or investigative action, suit or proceeding in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such advances if it shall be

ultimately determined that he is not entitled to be indemnified by the Corporation. The foregoing right of indemnification shall in no way be exclusive of any other rights of indemnification to which any such director or officer may be entitled, under any By-Law, agreement, vote of directors or stockholders or otherwise. No amendment to or repeal of the provisions of this Article SIXTH shall deprive a director or officer of the benefit hereof with respect to any act or failure to act occurring prior to such amendment or repeal.

SEVENTH: No director of the Corporation shall be personally liable to the Corporation or to any of its stockholders for monetary damages arising out of such director's breach of his fiduciary duty as a director of the Corporation, except to the extent that the elimination or limitation of such liability is not permitted by the General Corporation Law of the State of Delaware, as the same exists or may hereafter be amended. No amendment to or repeal of the provisions of this Article SEVENTH shall deprive any director of the Corporation of the benefit hereof with respect to any act or failure to act of such director occurring prior to such amendment or repeal.

EIGHTH: The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation in the manner now or hereafter prescribed by statute and this Certificate of Incorporation, and all rights conferred upon stockholders herein, are granted subject to this reservation."

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IN WITNESS WHEREOF, the Corporation has caused this Amended and Restated Certificate of Incorporation to be signed by Glenn Batchelder, its Chief Executive Officer, this 28th day of July, 2006.

ACCELERON PHARMA INC.

By: /s/ Glenn Batchelder
Glenn Batchelder, Chief Executive Officer