

**AMENDED AND RESTATED  
CERTIFICATE OF INCORPORATION  
OF APT PHARMACEUTICALS, INC.**

APT Pharmaceuticals, Inc., a corporation organized and existing under the laws of the State of Delaware, hereby certifies as follows:

1. The name of the corporation is APT Pharmaceuticals, Inc.
2. The date of filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was June 30, 2005. The date of filing of its Certificate of Merger was June 30, 2005. The date of filing of its Certificates of Amendment was March 9, 2006 and March 1, 2007.
3. This Amended and Restated Certificate of Incorporation restates and integrates and further amends the Certificate of Incorporation of the corporation as herein set forth in full:

**ARTICLE I**

The name of the corporation (hereinafter, the "*Corporation*") is APT Pharmaceuticals, Inc.

**ARTICLE II**

The address of the registered office of the Corporation in the State of Delaware is 3500 South DuPont Highway, City of Dover, County of Kent, zip code 19901 and the name of the registered agent of the Corporation in the State of Delaware at such address is Incorporating Services, Ltd.

**ARTICLE III**

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.

**ARTICLE IV**

The Corporation is authorized to issue two classes of stock, designated "*Common Stock*" and "*Preferred Stock*," each with a par value of \$0.0001 per share. The total number of shares of Common Stock that the Corporation is authorized to issue is 36,220,610 shares. The total number of shares of Preferred Stock that the Corporation is authorized to issue is 31,228,210 shares.

The Preferred Stock may be issued from time to time in one or more series. The first series of Preferred Stock shall comprised 9,088,785 shares and shall be designated "*Series A Preferred Stock*." The second series of Preferred Stock shall comprise 22,139,425 shares and

shall be designated "**Series A-2 Preferred Stock.**" The relative rights, preferences, privileges and restrictions granted to or imposed upon the Preferred Stock are as follows:

1. **Dividends.** The holders of the then outstanding Preferred Stock shall be entitled to receive, when and as declared by the Board of Directors, out of assets legally available therefor, prior and in preference to any declaration or payment of any dividend on the Common Stock (payable other than in Common Stock or other securities or rights convertible into or entitling the holder thereof to receive, directly or indirectly, additional shares of Common Stock), dividends at the rate of \$0.08 per annum for each share of Series A Preferred Stock, and \$0.08 per annum for each share of Series A-2 Preferred Stock, each as adjusted for any stock splits, reverse stock splits, combinations, stock dividends, recapitalizations and the like with respect to such shares after the date on which this Amended and Restated Certificate of Incorporation is recorded as filed by the Secretary of State of the State of Delaware (each a "**Recapitalization Event**"). No dividends shall be paid on any share of Series A Preferred Stock or Common Stock unless a dividend (including the amount of any dividends paid pursuant to the above provisions of this Section 1) is first paid with respect to all outstanding shares of Series A-2 Preferred Stock in an amount for each such share of Series A-2 Preferred Stock equal to or greater than the aggregate amount of such dividends for all shares of Common Stock into which each such share of Series A-2 Preferred Stock could then be converted. The right to dividends on shares of Preferred Stock shall not be cumulative, and no right shall accrue to holders of Preferred Stock by reason of the fact that dividends on said shares are not declared in any period, nor shall any undeclared or unpaid dividend bear or accrue interest. So long as any shares of Preferred Stock are outstanding, the Corporation shall not pay or declare any dividend, whether in cash or property, or make any other distribution on the Common Stock, or purchase, redeem or otherwise acquire for value any shares of Common Stock until all dividends set forth above on the Preferred Stock shall have been paid or declared and set apart.

2. **Liquidation Preference.** In the event of a liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary, the assets and funds of the Corporation available for distribution to stockholders shall be distributed as follows:

(a) First, the holders of shares of Series A Preferred Stock and Series A-2 Preferred Stock then outstanding shall be entitled to receive, out of the assets of the Corporation available for distribution to its stockholders, before any payment shall be made in respect of the Corporation's Common Stock, an amount equal to \$1.00 per share of Series A Preferred Stock, as adjusted for any Recapitalization Events (the "**Original Series A Stock Price**"), and \$1.00 per share of Series A-2 Preferred Stock, as adjusted for any Recapitalization Events (the "**Original Series A-2 Stock Price**"), plus all declared and unpaid dividends thereon to the date fixed for such distribution. If, upon the occurrence of such event, the assets of the Corporation legally available for distribution are insufficient to permit the payment to the holders of Preferred Stock of the full preferential amount, then the entire assets available for distribution to stockholders shall be distributed to the holders of Series A Preferred Stock and Series A-2 Preferred Stock ratably in proportion to the full preferential amounts which they would be entitled to receive pursuant to the preceding sentence of this Section 2(a).

(b) After the full preferential amounts due the holders of Preferred Stock pursuant to Section 2(a) have been paid or set aside, the remaining assets of the Corporation

available for distribution to its stockholders, if any, shall be distributed on an as-converted basis to the holders of Common Stock and Preferred Stock ratably in proportion to the number of shares of Common Stock then held, or issuable upon conversion of the shares of Preferred Stock then held, by each holder.

(c) An “event of liquidation” shall include (i) a merger or consolidation of the Corporation into or with another entity after which the stockholders of the Corporation immediately prior to such transaction do not own, immediately following the consummation of the transaction by virtue of their shares in the Corporation or securities received in exchange for such shares in connection with the transaction, a majority of the voting power of the surviving entity in proportions substantially identical to those that existed immediately prior to such transaction and with substantially the same rights, preferences, privileges and restrictions as the shares they held immediately prior to the transaction (an “*Acquisition*”), (ii) the sale, transfer or other disposition (but not including a transfer or disposition by pledge or mortgage to a bona fide lender) of all or substantially all of the assets or intellectual property of the Corporation (other than to a wholly-owned subsidiary) (a “*Asset Transfer*”), or (iii) the sale or transfer by the Corporation or its stockholders of more than 50% of the voting power of the Corporation in a transaction or series of related transactions other than in a transaction or series of transactions effected by the Corporation primarily for financing purposes, in which cash is received by the Corporation or any successor or indebtedness of the Corporation is cancelled or converted or a combination thereof; and any such event shall be deemed to be a liquidation of the Corporation as that term is used in this Section 2; provided, however, that the holders of at least sixty percent (60%) of the Preferred Stock, voting together as a single class, may at any time in writing waive treatment of any specific event as a liquidation.

(d) In the event of any liquidation of the Corporation involving the distribution of assets other than cash to the stockholders of the Corporation, the value of the assets to be distributed shall be determined as follows:

(i) In the case of securities that are not subject to investment letter or other similar restrictions on free tradability,

(A) if traded on a national securities exchange or through the Nasdaq Global Market, the value shall be deemed to be the average of the closing prices of the securities over the 10 day period ending three days prior to the closing;

(B) if actively traded over-the-counter, the value shall be deemed to be the average of (i) the average of the last bid and ask prices or (ii) the closing sale prices (whichever is applicable) over the 30 day period ending three days prior to the closing; and

(C) if there is no active public market, the value shall be the fair market value thereof, as mutually determined by the Corporation and the holders of at least a majority of the voting power of all then outstanding shares of Preferred Stock.

(ii) In the case of securities subject to investment letter or other restrictions on free marketability (other than restrictions arising solely by virtue of a

stockholder's status as an affiliate or former affiliate), the value shall be based on an appropriate discount from the market value determined as above in Section 2(d)(i) to reflect the approximate fair market value thereof, as mutually determined by the Corporation and the holders of at least a majority of the voting power of all then outstanding shares of Preferred Stock.

(iii) In the case of any other property, the value shall be equal to the property's fair market value, as determined in good faith by the Board of Directors of the Corporation, including a majority of the directors elected by the holders of Preferred Stock pursuant to Section 4(b) hereof.

3. **Conversion.** The holders of the Preferred Stock shall have conversion rights as follows:

(a) **Right to Convert.** Each share of Preferred Stock shall be convertible, 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 Preferred Stock, into a number of fully paid and nonassessable shares of Common Stock equal to the Original Series A Price, in the case of the Series A Preferred Stock, or the Original Series A-2 Price, in the case of the Series A-2 Preferred Stock, divided by the Conversion Price for such series of Preferred Stock in effect at the time of conversion. The Conversion Price for each of the Series A Preferred Stock and Series A-2 Preferred Stock shall initially be \$1.00, and shall be subject to adjustment as provided in Section 3(d) below.

(b) **Automatic Conversion.** Each share of Preferred Stock shall automatically be converted into fully paid and nonassessable shares of Common Stock, at the then effective Conversion Price, upon (i) the vote or written consent of at least sixty percent (60%) of the voting power represented by the then outstanding shares of Preferred Stock voting together as a single class and on an as-converted basis or (ii) the closing of a firm commitment underwritten public offering pursuant to an effective registration statement on Form S-1 (or a successor form) under the Securities Act of 1933, as amended, covering the offer and sale of Common Stock at an offering price of not less than \$3.00 per share, as adjusted for any Recapitalization Event, with aggregate gross proceeds to the Corporation (prior to underwriters' commissions and expenses) of not less than \$45,000,000 (a "*Qualified IPO*").

(c) **Mechanics of Conversion.** Before any holder of Preferred Stock shall be entitled to convert the same into shares of Common Stock, such holder shall surrender the certificate or certificates therefor, duly endorsed, at the headquarters of the Corporation or of any transfer agent for the Corporation and shall give written notice to the Corporation at such office that the holder elects to convert the same and shall state therein the name or names in which the certificate or certificates for shares of Common Stock are to be issued (except that no such written notice of election to convert shall be necessary in the event of an automatic conversion pursuant to Section 3(b) hereof). The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Preferred Stock, or to the nominee or nominees of such holder, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid. 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 (except that, in the case of an automatic conversion upon an initial public offering

pursuant to Section 3(b), such conversion shall be deemed to have been made immediately prior to the closing of the offering) and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date. Upon the occurrence of either of the events specified in Section 3(b)(i) or (ii) above, the outstanding shares 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 the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless either the certificates evidencing such shares of Preferred Stock are delivered to the Corporation or its transfer agent as provided above, or the holder notifies the Corporation or its transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement satisfactory to the Corporation to indemnify the Corporation against any loss incurred by it in connection with such certificates.

**(d) Adjustments to Conversion Price for Dilutive Issuances.**

**(i) Special Definitions.** For purposes of this Section 3(d), the following definitions shall apply:

**(A) “Original Issue Date”** shall mean, with respect to any series of Preferred Stock, the date on which shares of such series are first issued by the Corporation.

**(B) “Additional Shares of Common Stock”** shall mean all shares of Common Stock issued (or, pursuant to Section 3(d)(ii) below, deemed to be issued) by the Corporation after the Original Issue Date, other than:

**(1)** shares of Common Stock issued upon conversion of Preferred Stock;

**(2)** up to 3,622,400 shares of Common Stock (as adjusted for any Recapitalization Events) issued or issuable to officers, directors or employees of, or consultants to, the Corporation pursuant to any stock option plan or agreement or other stock incentive program or agreement approved by the Board of Directors, including shares or options issued prior to the Original Issue Date, provided that any options that expire or terminate unexercised or any unvested shares that are repurchased at cost shall not be counted toward such maximum number unless and until they are issued as new grants pursuant to the terms of any such plan, agreement or program;

**(3)** shares of Common Stock (as adjusted for any Recapitalization Events) issued or issuable to landlords, equipment lessors, lenders or other financial institutions in a commercial transaction or arrangement approved by the Board of Directors;

**(4)** shares issued upon exercise or conversion of any warrants that are outstanding as of the date of this Amended and Restated Certificate of Incorporation;

(5) shares (as adjusted for any Recapitalization Events) issued in connection with the acquisition by the Corporation of voting control or all or substantially all of the assets of another business entity in a transaction approved by the Board of Directors;

(6) shares for which an adjustment is made pursuant to Section 3(d)(v); or

(7) shares (as adjusted for any Recapitalization Events) issued in connection with acquisitions of technology or intellectual property in transactions that are approved by the Board of Directors.

(C) “*Options*” shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Common Stock or Convertible Securities (as defined below).

(D) “*Convertible Securities*” shall mean any evidences of indebtedness, shares of Preferred Stock or other securities convertible into or exchangeable for Common Stock.

(E) “*Novartis*” shall mean Novartis Pharma AG and its successors and assigns.

(F) “*Call Back Option*” shall mean the rights of Novartis pursuant to and set forth in Article 5 of that certain Sublicense and Option Agreement dated as of May 9, 2007 by and between the Corporation and Novartis, as it may be amended from time to time.

(G) “*Ratchet Elimination Date*” shall mean the date of the earliest of the following events to occur: (i) the exercise of the Call Back Option by Novartis or its expiration or other elimination, and (ii) the Corporation’s consummation of an equity financing transaction resulting in aggregate gross proceeds to the Corporation (including from conversion of debt) of at least \$10,000,000.00, and with a per share purchase price for the equity security sold and issued in such financing of not less than \$1.30 per share.

(ii) **Deemed Issue of Additional Shares of Common Stock.** In the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options 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 following provisions shall apply:

(A) 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 upon the conversion or exchange of such Convertible Securities shall be deemed to be Additional Shares of Common Stock issued as of the time of the issuance of such Option or Convertible Security or, in case such a record date shall have been fixed, as of the close of business on such record date.

(B) Except as provided in paragraphs (C) and (D) below, no further adjustment in the 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.

(C) If such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any change in the consideration payable to the Corporation or the number of shares of Common Stock issuable upon the exercise, conversion or exchange thereof (other than a change resulting from the antidilution provisions of such Options or Convertible Securities), the 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; provided, however, that such recomputed Conversion Price shall not exceed the Conversion Price that would have been in effect had the original issuance of Options or Convertible Securities not been deemed to constitute an issuance of Additional Shares of Common Stock.

(D) Upon the expiration of any such Options or Convertible Securities, the Conversion Price, to the extent in any way affected by or computed using such Options or Convertible Securities, shall be recomputed to reflect the issuance of only the number of shares of Common Stock actually issued upon the exercise of such Options or Convertible Securities.

**(iii) Adjustment of Conversion Price for Dilutive Issuances.**

(A) Series A-2 Preferred Stock. In the event the Corporation shall sell and issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Section 3(d)(ii)) after the Original Issue Date of Series A-2 Preferred Stock for a consideration per share less than the Conversion Price for the Series A-2 Preferred Stock in effect immediately prior to such issuance, then and in each such event the Conversion Price for the Series A-2 Preferred Stock shall be adjusted as provided in this Section 3(d)(iii)(A).

(1) Upon any issuance of Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Section 3(d)(ii)), occurring before the Ratchet Elimination Date, the Conversion Price for the Series A-2 Preferred Stock shall be reduced to the per share price paid for the Additional Shares of Common Stock.

(2) Upon any issuance of Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Section 3(d)(ii)), occurring on or after the Ratchet Elimination Date, the Conversion Price for the Series A-2 Preferred Stock shall be reduced to a price (rounded to the nearest one tenth of one cent) equal to such Conversion Price multiplied by a fraction:

(a) the numerator of which is equal to the number of shares of Common Stock outstanding or deemed to be outstanding immediately prior to such issuance plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at the Conversion Price in effect immediately prior to such issuance; and

(b) the denominator of which is equal to the number of shares of Common Stock outstanding or deemed to be outstanding immediately prior to such issuance plus the number of Additional Shares of Common Stock so issued.

**(B) Series A Preferred Stock.** In the event the Corporation shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to Section 3(d)(ii)) after the Original Issue Date of the Series A Preferred Stock without consideration or for a consideration per share less than the Conversion Price for the Series A Preferred Stock in effect immediately prior to such issuance, then and in each such event the Conversion Price for the Series A Preferred Stock shall be reduced to a price (rounded to the nearest one tenth of one cent) equal to such Conversion Price multiplied by a fraction:

(1) the numerator of which is equal to the number of shares of Common Stock outstanding or deemed to be outstanding immediately prior to such issuance plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at the Conversion Price in effect immediately prior to such issuance; and

(2) the denominator of which is equal to the number of shares of Common Stock outstanding or deemed to be outstanding immediately prior to such issuance plus the number of Additional Shares of Common Stock so issued.

For the purposes of this Section 3(d)(iii), the number of shares of Common Stock deemed to be outstanding shall be deemed to include the Common Stock issuable upon full exercise and conversion of all then outstanding Options and Convertible Securities, not including shares excluded from the definition of "Additional Shares of Common Stock" pursuant to Section 3(d)(i)(B)(2).

**(iv) Determination of Consideration.** For purposes of this Section 3(d), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

**(A) Cash and Property.** Such consideration shall:

(1) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation before deducting any reasonable discounts, commissions or other expenses allowed, paid or incurred by the Corporation for any underwriting or otherwise in connection with the issuance and sale thereof;



(2) 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

(3) in the event Additional Shares of Common Stock are issued together with other securities or other assets of the Corporation for consideration that covers both, be the proportion of such consideration so received, computed as provided in clauses (1) and (2) above, as determined in good faith by the Board of Directors.

**(B) 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 Section 3(d) relating to Options and Convertible Securities shall be equal to:

(1) the total amount, if any, received or receivable by the Corporation as consideration for the issuance 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, divided by

(2) 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.

**(v) Other Adjustments to Conversion Price.**

**(A) Subdivisions, Combinations or Consolidations of Common Stock.** In the event the outstanding shares of Common Stock shall be subdivided, combined or consolidated, by stock split, reverse stock split or similar event, into a greater or lesser number of shares of Common Stock after the Original Issue Date of a series of Preferred Stock, the Conversion Price for such series in effect immediately prior to such subdivision, combination or consolidation shall, concurrently with the effectiveness of such subdivision, combination or consolidation, be proportionately adjusted.

**(B) Common Stock Dividends and Distributions.** If, after the Original Issue Date of a series of Preferred Stock, the Corporation at any time or from time to time issues, or fixes a record date for determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then in each such event, as of the time of such issuance or, in the event such record date is fixed, as of the close of business on such record date, the Conversion Price for such series that is then in effect shall be decreased by multiplying the Conversion Price then in effect by a fraction, (x) the numerator of which is the number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(y) the denominator of which is the number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution; provided, however, that if such record date is fixed and such dividend or distribution is not paid in full on the date fixed therefor, the Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price shall be adjusted pursuant to this Section 3(d)(v)(B) to reflect the actual payment of such dividend or distribution.

**(C) Other Distributions.** In case the Corporation shall distribute to holders of its Common Stock shares of its capital stock (other than shares of Common Stock and other than as otherwise subject to adjustment pursuant to this Section 3(d)), stock or other securities of other persons, evidences of indebtedness issued by the Corporation or other persons, assets (excluding cash dividends) or options or rights (excluding options to purchase and rights to subscribe for Common Stock or other securities of the Corporation convertible into or exchangeable for Common Stock), or shall fix a record date for determination of holders of Common Stock entitled to receive such a distribution, then, in each such case, provision shall be made so that the holders of Preferred Stock shall be entitled to 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 on the date of such event (or on the record date with respect thereto, if such record date is fixed) and had they thereafter, during the period from the date of such event to and including the date of conversion, retained such securities receivable by them as aforesaid during such period, subject to all other adjustments called for during such period under this Section 3 with respect to the rights of the holders of the Preferred Stock.

**(D) Recapitalizations and Reorganizations.** In the case of any capital recapitalization or reorganization (other than a subdivision, combination or other recapitalization provided for elsewhere in this Section 3 or a merger or sale of assets provided for in Section 2), or the fixing of any record date for determination of holders of Common Stock affected by such recapitalization or reorganization, provision shall be made so that the holders of Preferred Stock shall be entitled to receive, upon conversion thereof, the type and number of shares of stock or other securities or property of the Corporation or otherwise that they would have received had their Preferred Stock been converted into Common Stock on the date of such event (or on the record date with respect thereto, if such record date is fixed) and had they thereafter, during the period from the date of such event to and including the date of conversion, retained such securities receivable by them as aforesaid during such period, subject to all other adjustments called for during such period under this Section 3 with respect to the rights of the holders of the Preferred Stock. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 3 to the end that the provisions of this Section 3 shall be applicable after the recapitalization or reorganization to the greatest extent practicable.

**(e) Certificate as to Adjustments.** Upon the occurrence of each adjustment or readjustment of the Conversion Price for a series of Preferred Stock pursuant to this Section 3, the Corporation at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of a share of such series of Preferred Stock a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based including the consideration received for

any Additional Shares of Common Stock issued. The Corporation shall, upon the written request at any time of any holder of a Preferred Stock, furnish or cause to be furnished to such holder a like certificate setting forth (i) such adjustments and readjustments, (ii) the Conversion Price at the time in effect for the series of Preferred Stock held by such holder and (iii) the number of shares of Common Stock and the type and amount, if any, of other property which at the time would be received upon the conversion of a share of such series of Preferred Stock.

(f) **Fractional Shares.** No fractional shares of Common Stock shall be issued upon conversion of shares of Preferred Stock. In lieu of any fractional shares to which the holder of Preferred Stock would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of one share of Common Stock as determined by the Board of Directors of the Corporation. The number of whole shares issuable to each holder of a series of Preferred Stock upon such conversion shall be determined on the basis of the number of shares of Common Stock issuable upon conversion of the total number of shares of such series being converted into Common Stock by such holder at that time.

(g) **Notices of Record Date.** In the event (i) the Corporation shall take a record of the holders of its capital stock for the purpose of entitling them to receive a dividend or other distribution (other than a cash dividend) or to subscribe for or purchase any shares of stock of any class or to receive any other rights, (ii) of any capital reorganization, reclassification or recapitalization (other than a subdivision or combination of its outstanding shares of Common Stock), or (iii) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation or any transaction deemed to be a liquidation pursuant to Section 2, then, and in any such case, the Corporation shall cause to be mailed to each holder of record of the Preferred Stock at the address of record of such stockholder as set forth on the Corporation's books, at least 20 days prior to the earliest date hereinafter specified, a notice stating the material terms of the proposed transaction and the date on which (x) a record is to be taken for the purpose of such dividend, distribution or rights or (y) such reorganization, reclassification, recapitalization, dissolution, liquidation or winding up is to take place and the date, if any is to be fixed, as of which holders of capital stock of record shall be entitled to exchange their shares of capital stock for securities or other property deliverable upon such reorganization, reclassification, recapitalization, dissolution, liquidation or winding up; provided, however, that such notice period may be shortened upon the written consent of holders of Preferred Stock that are entitled to such notice rights or similar notice rights and that represent at least a majority of the voting power of all then outstanding shares of such Preferred Stock. If any material change in the facts set forth in the written notice shall occur, the Corporation shall promptly give written notice of such material change to each holder of shares of Preferred Stock.

(h) **No Impairment.** Without obtaining such consent of the holders of Preferred Stock as may be required under Section 6, the Corporation will 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 will at all times in good faith assist in the carrying out of all the provisions of this Section 3 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.

(i) **Reservation of Stock Issuable Upon Conversion.** The Corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of Preferred Stock, the Corporation will 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.

**4. Voting Rights.**

(a) **General.** Each holder of Preferred Stock shall be entitled to a number of votes equal to the number of whole shares of Common Stock into which such holder's shares of Preferred Stock could then be converted and, except as otherwise required by law or as set forth herein, shall have voting rights and powers equal to the voting rights and powers of the Common Stock. Each holder of Preferred Stock shall be entitled to notice of any stockholders' meeting in accordance with the Bylaws of the Corporation and shall be entitled to vote with the holders of Common Stock with respect to any matter upon which holders of Common Stock have the right to vote, except as otherwise provided herein or those matters required by law to be submitted to a class vote.

(b) **Election of Directors.** At each election of directors of the Corporation, (i) the holders of Series A Preferred Stock, voting as a separate class, shall be entitled to elect one (1) director, (ii) the holders of Series A-2 Preferred Stock, voting as a separate class, shall be entitled to elect two (2) directors, and (iii) the holders of sixty percent (60%) of the Preferred Stock and Common Stock, voting together as a single class on an as-converted basis, shall be entitled to elect the remaining directors of the Corporation, one of whom shall be the Chief Executive Officer of the Corporation.

**5. Protective Provisions.** So long as any shares of Preferred Stock are outstanding, the Corporation shall not, without first obtaining the affirmative vote or written consent of the holders of at least sixty percent (60%) of the voting power represented by the then outstanding shares of Preferred Stock, voting together as a single class and on an as-converted basis:

(a) amend, alter or repeal any provisions of its Certificate of Incorporation or Bylaws;

(b) reclassify any outstanding shares of securities of the Company into shares having rights, preferences or privileges senior to or on a parity with either the Series A or Series A-2 Preferred Stock;

(c) authorize or issue any equity security having rights or preferences senior to or on a parity with either the Series A or Series A-2 Preferred Stock;

(d) enter into transaction or series of related transactions involving a merger or consolidation with another entity, or a sale, conveyance or disposal of all or substantially all of its assets;

(e) sell, lease or otherwise dispose of all or substantially all the Corporation's assets in a single transaction or series of related transactions;

(f) exclusively license all or substantially all of the Corporation's intellectual property in a single transaction or series of related transactions;

(g) liquidate, dissolve or wind up the Corporation;

(h) increase or decrease the authorized number of the members of the Board of Directors;

(i) declare or pay any dividends or make any other distribution, directly or indirectly, on account of any shares of equity securities now or hereafter outstanding;

(j) redeem (other than in connection with the repurchase of stock at cost from service providers upon cessation of services), repurchase or otherwise acquire any outstanding shares of the Corporation's capital stock or rights to acquire capital stock;

(k) incur indebtedness (other than accounts payable in the ordinary course of business) in excess of \$500,000 in the aggregate;

(l) make any authorization to incur, or any agreement by the Corporation to incur, or make any single capital expenditure in excess of \$500,000 or aggregate capital expenditures in excess of \$1,000,000 per fiscal year of the Corporation, unless included in a budget approved by the Board of Directors;

(m) acquire any interest in any business with a value in excess of \$50,000 (whether by purchase of assets, purchase of stock, merger or otherwise);

(n) change the Corporation's principal line or lines of business;

(o) enter into or modify any agreement, transaction or arrangement with any of its officers, directors or employees, except for customary compensation or benefit arrangements as approved by the Board of Directors;

(p) amend the Corporation's existing stock option plan or approve any new equity incentive plan;

(q) increase or decrease (other than by conversion) the authorized number of shares of the Preferred Stock or any series of the Preferred Stock;

(r) issue any equity securities of any subsidiaries of the Corporation other than to the Corporation.

(s) enter into any amendment of that certain Sublicense and Option Agreement dated as of May 9, 2007 by and between the Corporation and Novartis Pharma AG.

6. **Status of Converted Stock.** In the event any shares of Preferred Stock shall be converted pursuant to Section 3 hereof, or otherwise acquired by the Corporation, the shares so converted shall be canceled and shall not be issuable by the Corporation, and the Certificate of Incorporation of the Corporation shall be appropriately amended to effect the corresponding reduction in the Corporation's authorized capital stock.

7. **No Redemption.** The Preferred Stock shall not be redeemable.

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.

9. **Consent to Certain Repurchases.** To the extent the Corporation may be subject to Section 2115 of the California Corporations Code, each holder of shares of Preferred Stock shall be deemed to have consented, for purposes of Sections 502 and 503 of the California Corporations Code, to any distribution made by the Corporation in connection with the repurchase of shares of Common Stock issued to or held by employees, officers, directors, consultants or other service providers (i) pursuant to agreements providing for such repurchase at the original purchase price, (ii) at a purchase price not exceeding the fair market value of such Common Stock, or (iii) in connection with the exercise of a contractual right of first refusal entitling the Corporation to purchase the shares upon the terms offered by a third party, provided, in the case of clauses (ii) and (iii), that the purchase is approved by the Board of Directors.

## **ARTICLE V**

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. In addition to the powers and authority expressly conferred upon them by statute or by this Amended and Restated Certificate of Incorporation or the Bylaws of the Corporation, the directors are hereby empowered to exercise all such powers and do all such acts and things as may be exercised or done by the Corporation. Election of directors need not be by written ballot, unless the Bylaws so provide.

## **ARTICLE VI**

Subject to Article IV, Section 5, the Board of Directors is authorized to make, adopt, amend, alter or repeal the Bylaws of the Corporation. The stockholders shall also have power to make, adopt, amend, alter or repeal the Bylaws of the Corporation.

## **ARTICLE VII**

To the fullest extent permitted by the Delaware General Corporation Law, as the same exists or may hereafter be amended, a director of the Corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. The Corporation is authorized to provide indemnification of agents (as defined in Section 317 of the California Corporations Code) through bylaw provisions, agreements with agents, vote of shareholders or disinterested directors, or otherwise, in excess of the indemnification otherwise permitted by Section 317 of the California Corporations Code, subject only to the applicable limits on indemnification set forth in Sections 204 and 317 of the California Corporations Code with respect to actions for breach of duty to the Corporation or its

stockholders, to the extent the Corporation is subject to those provisions pursuant to Section 2115 of the California Corporations Code. Any repeal or modification of the foregoing provisions of this Article VII by the stockholders of the corporation shall not adversely affect any right or protection of a director of the corporation existing at the time of, or increase the liability of any director of the corporation with respect to any acts or omissions occurring prior to, such repeal or modification.

#### **ARTICLE VIII**

Subject to Article IV, Section 5, the Corporation reserves the right to amend or repeal any of the provisions contained in this Amended and Restated Certificate of Incorporation in any manner now or hereafter permitted by law, and the rights of the stockholders of the Corporation are granted subject to this reservation.

\* \* \*

4. This Amended and Restated Certificate of Incorporation has been duly adopted by the board of directors and stockholders of the Corporation in accordance with the applicable provisions of Sections 242 and 245 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, this Amended and Restated Certificate of Incorporation has been executed by the President of the Corporation this 24th day of September, 2007.

**APT PHARMACEUTICALS, INC.**

By: /s/ Stephen G. Dilly  
Stephen G. Dilly  
President and CEO