

LATHAM & WATKINS LLP

June 8, 2007

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Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as special counsel to Pharmacyclics, Inc., a Delaware corporation (the "Company"), in connection with the registration for resale of 1,000,000 shares of common stock of the Company, \$0.0001 par value per share (the "Shares"), issued to Applera Corporation ("Applera") pursuant to the Stock Purchase Agreement, dated as of April 7, 2006, by and between the Company and Applera. The Shares are included in a registration statement on Form S-3 under the Securities Act of 1933, as amended (the "Act"), filed with the Securities and Exchange Commission (the "Commission") on June 8, 2007 (the "Registration Statement"). This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related Prospectus, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to General Corporation Law of the State of Delaware, and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, the Shares have been duly authorized by all necessary corporate action of the Company, validly issued, and are fully-paid and nonassessable.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Prospectus under the heading "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Latham & Watkins LLP