

Via Facsimile and U.S. Mail
Mail Stop 6010

September 19, 2008

Ms. Adelene Q. Perkins
Executive Vice President & Chief Business Officer
Infinity Pharmaceuticals, Inc.
780 Memorial Drive
Cambridge, Massachusetts 02139

Re: **Infinity Pharmaceuticals, Inc.**
Form 10-K for Fiscal Year Ended December 31, 2007
Filed on March 14, 2008
Form 10-Q for Period Ended June 30, 2008
Filed on August 6, 2008
File No. 000-31141

Dear Ms. Perkins:

We have limited our review of your filings to those issues we have addressed in our comments. In our comments, we ask you to provide us with information to better understand your disclosure. Where a comment requests you to revise disclosure, the information you provide should show us what the revised disclosure will look like and identify the annual or quarterly filing, as applicable, in which you intend to first include it. If you do not believe that revised disclosure is necessary, explain the reason in your response. After reviewing the information provided, we may raise additional comments and/or request that you amend your filing.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filings. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-Q for the Quarter Ended June 30, 2008

Condensed Consolidated Financial Statements

Notes to Condensed Consolidated Financial Statements

3. Significant Accounting Policies, page 4

Cash Equivalents and Available-for-Sale Securities

1. You state that your cash equivalents consist primarily of money market funds and corporate obligations. Revise your disclosure to clarify whether the corporate obligations classified in cash equivalents are readily convertible to known amounts of cash and are so near their maturity that they present insignificant risk of changes in value because of changes in interest rates. Refer to paragraph 8 of SFAS 95. Tell us whether your current classification is consistent with prior periods and revise your disclosure to clarify.
2. For securities classified as available-for-sale, disclose the aggregate fair value, the total gains for securities with net gains in accumulated other comprehensive income, and the total losses for securities with net losses in accumulated other comprehensive income, by major security type. Disclose information about the contractual maturities of your securities classified as available-for-sale. Refer to paragraphs 19 and 20 of SFAS 115.

6. Fair Value, page 8

3. We note that you reported a significant amount of asset-backed securities carried at fair value in your financial statements in your recent Form 10-K. Statement of Financial Accounting Standards No. 157, Fair Value Measurements, defines fair value, provides a framework for you to measure the fair value of your assets and liabilities, and requires you to provide certain disclosures about those measurements. In this regard, please revise your disclosures to discuss the nature and the amount of your portfolio for which market quotations are not used to obtain fair value. Describe the methods used by management to estimate fair value and discuss the changes in valuation methods, if any, during the period. Refer to paragraph 32(e) of SFAS 157 and to paragraph 16 of SFAS 154.

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Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provide the requested information. Detailed letters greatly facilitate our review. Please furnish your letter on EDGAR under the form type label CORRESP.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing include all information required under

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the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in your letter, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filings;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Ibolya Ignat, Staff Accountant at (202) 551-3656, or Joel Parker, Accounting Branch Chief, at (202) 551-3651 if you have questions regarding these comments. In this regard, do not hesitate to contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief
Accountant