

Mail Stop 6010

October 31, 2007

Kenneth C. Carter, Ph.D.
President and Chief Executive Officer
Avalon Pharmaceuticals, Inc.
20358 Seneca Meadows Parkway
Germantown, MD 20876

**Re: Avalon Pharmaceuticals, Inc.
Registration Statement on Form S-3
File Number 333-146937**

Dear Dr. Carter:

This is to advise you that we have limited our review of the above referenced registration statement to the issues identified below.

It appears that you are attempting to use Instruction I.(B)(1) to establish eligibility to use Form S-3. However, Instruction I.(B)(1) is only available if the aggregate market value of the voting and non-voting common equity held by your non-affiliates is \$75 million or more. Based on our review of your latest Form 10-K, it does not appear you meet this requirement. Please explain to us why you are eligible to use the Form S-3 or amend your registration statement on an appropriate form.

We will further be monitoring your registration statement for resolution of your pending confidential treatment request. All comments will need to be fully resolved before we take final action on the registration statement.

* * *

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings reviewed by the staff to be certain that they have provided all information investors require for an informed 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.

Notwithstanding our comments, in the event the company requests acceleration of the

effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert this action 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 connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as a confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

Please contact Rose Zukin at (202) 551-3239 or me at (202) 551-3710 with any questions.

Sincerely,

Jeffrey P. Riedler
Assistant Director

cc: Michael J. Silver
Hogan & Hartson L.L.P.
111 South Calvert Street, Suite 1600
Baltimore, MD 21202