

Mail Stop 4720

June 7, 2010

Steven A. Kriegsman
Chief Executive Officer and President
CytRx Corporation
11726 San Vicente Blvd, Suite 650
Los Angeles, California 90049

**Re: CytRx Corporation
Form 10-K for the year ended December 31, 2009
Filed March 15, 2010
File No. 000-15327**

Dear Mr. Kriegsman:

We have reviewed your filing and have the following comments. Where the comments request 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 filing. We look forward to working with you in these respects. We welcome any questions you may have about our comment or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Patents and Proprietary Rights, page 10

1. Please expand this section to disclose all material patents, the products or technologies to which they relate, the related expiration dates, the jurisdictions that issued them, and indicate if the patents are owned or licensed.

Compensation Discussion and Analysis, page 48

2. We note that you have not included any disclosure in response to Item 402(s) of Regulation S-K. Please advise us of the basis for your conclusion that disclosure is not necessary and describe the process you undertook to reach that conclusion.

Setting Executive Compensation, page 49

3. Please disclose the two third-party industry compensation surveys that were used by the Compensation Committee in setting compensation for your executive officers.

Annual and Special Bonuses, page 50

4. We note your disclosure that, “the Compensation Committee bases its discretionary compensation awards on the achievement of product development targets and milestones, efforts related to extraordinary transactions, effective fund-raising efforts, and effective management of personnel and capital resources, among other criteria.” We also note that during 2009, the Compensation Committee granted cash bonuses to the named executive officers “principally based on their efforts in helping ... advance the development of [y]our products and raise capital.” Please expand your disclosure to discuss with more specificity all of the material performance factors considered for each named executive officer, the Committee’s assessment of each named executive officer with respect to those performance factors, and how the Compensation Committee translated such assessment into the specific bonus awards ultimately granted to each named executive officer.

Equity Incentive Compensation, page 50

5. As in our prior comment regarding annual bonuses, please also discuss the specific factors considered by the Compensation Committee in awarding stock options to each of the named executive officers, summarize the Committee’s assessment of each named executive officer with respect to those factors and explain how the Committee’s assessment resulted in the amount of stock option grants to each named executive officer.

Signatures, page 68

6. Please amend your Form 10-K to include the signatures of your principal executive officer or officers, your principal financial officer or officers, your controller or principal accounting officer, and at least the majority of the board of directors or persons performing similar functions as required by Instruction D(2)(a) of Form 10-K.

* * *

Please respond to these comments within 10 business days or tell us when you will provide us with responses. Please furnish a letter that keys your response 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 includes all information required under 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 filing;
- 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 comment on your filing.

Please contact Michael Rosenthal at (202) 551-3674 or me at (202) 551-3715 with any questions.

Sincerely,

Jeffrey P. Riedler
Assistant Director