

Via Facsimile and U.S. Mail
Mail Stop 6010

December 21, 2007

Martin McGlynn
President and Chief Executive Officer
Stemcells, Inc.
3155 Porter Drive
Palo Alto, CA 94304

Re: Stemcells, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2006
Filed March 15, 2007
File Number: 000-19871

Dear Mr. McGlynn:

We have reviewed your filing and have the following comments. In our comments, we ask you to provide us with information to better understand your disclosures. 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 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.

General

1. We note that you have included certain license agreements as exhibits to the Form 10-K and not others. For example, you do not include as exhibits your agreements with the California Institute of Technology and the Oregon Health & Science University. Please provide us with an analysis supporting your determination as to how you have determined which of your license agreements are material contracts required to be filed as exhibits.

2. On page 20 of the Form 10-K you refer to consulting agreements with SAB members. Only one of these agreements has been included as an exhibit to the Form 10-K, that with Dr. Weissman. In addition, a consulting agreement with Judi R. Lum is included as an exhibit but not described or referred to in the Form 10-K discussion. Please provide us with an analysis supporting your determination as to how you have determined which consulting agreements are material contracts. In addition, you refer to various “research collaborations” in the Form 10-K, with organizations such as the Reeve-Irvine Center at the University of California, Oregon Health & Science University, the Yale University School of Medicine and NIH. We note that you have not included any collaboration agreements as exhibits to the Form 10-K. Please provide us with an analysis supporting your determination as to how you have determined that these collaboration agreements are not material contracts required to be filed as exhibits.
3. In the description of legal proceedings in the Form 10-K you describe an action by Geron Corporation in which the result is that two patents being maintained by the company would be in altered form. In addition, you describe a dispute with Neuralstem over four patents. Please revise your disclosure to briefly describe these patents in the section titled “Patents, Proprietary Rights and Licenses” to the extent you have not already done so and to disclose the patent description or number in “Item 3. Legal Proceedings.” In addition, please revise your disclosure in “Item 3. Legal Proceedings” to explain what it means to be in “somewhat altered form.”

Research and Development Programs, page 5

Overview, Page 5

4. We believe that your disclosures about historical research and development expenses and estimated future expenses related to your major research and development projects could be enhanced for investors. Please refer to the Division of Corporation Finance “Current Issues and Rulemaking Projects Quarterly Update” under section VIII – Industry Specific Issues – Accounting and Disclosure by Companies Engaged in Research and Development Activities. You can find it at the following website address: <http://www.sec.gov/divisions/corpfin/cfcrq032001.htm>. Please revise your MD&A to disclose the following information for each of your major research and development projects.
 - a. The current status of the project;
 - b. The costs incurred during each period presented and to date on each project;

- c. The nature, timing and estimated costs of the efforts necessary to complete each project;
- d. The anticipated completion dates of each project;
- e. The risks and uncertainties associated with completing development on schedule, and the consequences to operations, financial position and liquidity if each project is not completed timely; and finally
- f. The period in which material net cash inflows from significant projects are expected to commence for each project.

Regarding b., if you do not maintain any research and development costs by project, disclose that fact and explain why management does not maintain and evaluate research and development costs by project. Provide other quantitative or qualitative disclosure that indicates the amount of the company's resources being used on the project.

Regarding c. and d., disclose the amount or range of estimated costs and timing to complete the phase in process and each future phase. To the extent that information is not estimable, disclose those facts and circumstances indicating the uncertainties that preclude you from making a reasonable estimate.

* * * *

Please provide us the information requested within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter with your response that keys your response to our comments. Detailed cover 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.

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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.

Please contact Vanessa Robertson, Staff Accountant, at (202) 551-3649 or Jim Atkinson, Accounting Branch Chief, at (202) 551-3674 if you have any questions regarding the processing of your response as well as any questions regarding comments on the financial statements and related matters. You may contact Sonia Barros, Staff Attorney, at (202) 551-3861 or Jeffrey Riedler, Assistant Director, at (202) 551-3715 with questions on any of the other comments. In this regard, do not hesitate to contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief
Accountant