Mail Stop 0309

June 30, 2005

Judy M. Robinett
President and Chief Executive Officer
Medical Discoveries, Inc.
1338 S. Foothill Drive - #266
Salt Lake City, Utah 84108

Re: Medical Discoveries, Inc.
Amendment No. 2 to Form SB-2 Registration Statement
File No. 333-121635

Dear Ms.Robinette:

We have reviewed your filing and have the following comments.
Where indicated, we think you should revise your document in response
to these comments. If you disagree, we will consider your
explanation as to why our comment is inapplicable or a revision is
unnecessary. Please be as detailed as necessary in your explanation.
In some of our comments, we may ask you to provide us with
supplemental information so we may better understand your disclosure.
After reviewing this information, we may or may not raise additional
comments.

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. Your letter of response indicates, with respect to most of the comments in our previous letter, only that "the prospectus has been
revised in response to the Staff`s comments." When you respond to
the comments in this letter, please indicate, in each response,
precisely where the revisions are located and, in reasonable detail,
what they consist of.

2. We note that you have made a number of revisions to your previously filed document that have not been red-lined in this amendment. See, for example, the footnotes now presented on pages 1
and 2 and the footnotes to the selling security holders table on page
12. Please ensure that all revisions are red-lined in future amendments to this registration statement.

3. We are unable to locate the disclosure required by Item 402 of Regulation S-B. Please include it in your next amendment.

Prospectus Summary - page 1

4. Please revise the disclosure under "Our Company" to disclose the
exact developmental status of each of your proposed products.

5. It appears that there is no minimum conversion price per share on
the convertible preferred stock you issued on March 14, 2005. Please
clearly indicate this and include appropriate disclosure here, and in

the risk factor section, regarding the potential adverse consequences
for investors.

6. Also, please tell us why you used a $.05 per share conversion price to determine the number of shares underlying the convertible preferred stock issued in March if there is not a minimum conversion
price.

7. Please disclose the maximum and minimum number of shares that could be issued on conversion of all of the convertible preferred stock.

Risk Factors - page 2

8. Please include a risk factor addressing "penny stock" issues.

9. Please include a risk factor addressing the risks and adverse consequences resulting from the beneficial ownership of 80.58% of your common stock by Mercator Advisory Group, LLC.

We are a development-stage company that has not yet commercialized a
product. - page 2

10. In the third sentence of the risk factor you characterize your pre-clinical studies of MDI-P and SaveCream as "quite favorable." It
is unclear what this statement means, especially in the pre-clinical
context. In addition, it appears to be mitigating language that is
inappropriate in risk factor disclosure. Please delete it.

11. In addition, we are unable to locate any disclosure in the document relating to pre-clinical studies of SaveCream. Please either delete the reference or provide the information supporting the
statement.

We may not be able to raise sufficient capital to meet present and future obligations. - page 3

12. You indicate that as of March 31, 2005, your current liabilities
exceeded your current assets by $760,802 and you need to obtain additional capital to meet "basic operational needs." Please identify and quantify these needs. Discuss the steps you have taken
or intend to take to remedy this situation. Identify the specific adverse consequences that you will experience if you are unable to satisfy your current liabilities or operational needs.

13. On page 22 you indicate that you have filed an IND with the FDA
seeking permission to begin Phase I human clinical trials of MDI-P as
a treatment for cystic fibrosis, and the FDA has requested further animal testing and raised other questions. Please address the effect
your financial condition has and will have on your IND application as
part of this risk factor.

14. In the fourth sentence of the risk factor you state that you do
not anticipate that revenues will satisfy these capital requirements.
This suggests that you currently have revenues, which is not the case. Please delete the statement.

15. In the last bullet of the risk factor you refer to "the effect of
the exercise of outstanding options and warrants exercisable into approximately 60 million shares of common stock." Please describe what this effect is likely to be.

Our operations are and will be subject to extensive regulation. - page 4

16. Please refer to comment 8 in our previous letter. In that comment we asked you to reconcile a number of statements regarding submission of an IND to the FDA. Your response indicates that you revised the prospectus in response to the comment, but we are

unable
to locate the revised disclosure. Please tell us where to find
the
revised disclosure, or provide us with the information we
previously
requested

We face intense competition and competing products. - page 6

17. The information in this risk factor is so vague and abstract
that
it is applicable to most companies in your industry. Please
expand
the risk factor to identify your most significant competitors and
the
competing products for each of your proposed drugs. Discuss how
you
propose to compete with these competitors and products given your
limited resources.

Our intellectual property may not be adequately protected. - page
6

18. Please refer to comment 9 in our previous letter. Your
revised
risk factor does not address most of the issues we raised in that
comment. Please revise the risk factor as we previously
requested.

We may need to litigate to secure our rights to SaveCream and
related
assets. - page 7

19. You say that at the time you acquired SaveCream, the seller
had
not yet obtained and filed with the appropriate patent offices
assignments of the various inventors` rights to the underlying
inventions. Please expand the risk factor to identify the patent
offices, inventors, inventors` rights and underlying inventions
you
refer to.

20. You say further that you may need to initiate litigation
against
the inventors to secure the assignments. Please indicate what
country you would have to litigate this issue in, whether you
currently have the funds to do so, and whether the inventors have
refused to make the assignments. If so, also indicate what the
basis
for their refusal is.

21. It is unclear whether the failure to obtain the assignments
means
that the intellectual property you acquired in this transaction is
not patentable, or whether patent applications have even been
filed.
We may have additional comments after we review your response.

The market for our stock is thin and subject to manipulation. -
page
8

22. Please revise the risk factor to discuss the "thin" trading in
your stock as well as the potential for "manipulation" referenced
in
the subheading. Quantify the disclosure to the extent
practicable.

Obtaining additional capital though the sale of common stock will
result in dilution of stockholder interests. - page 8

23. We note that this risk factor is related to the risk factor
called "We may not be able to raise sufficient capital..." on page
3.
Please relocate it so that it follows that risk factor. Also,
please
tie this risk to the last bullet in the risk factor on page 3.

24. Under "Dilution" on page 10, you discuss the adverse impact
that
outstanding options and conversion rights may have on future
equity
offerings. You should also address this impact in the relocated
risk
factor.

Selling Securityholders - page 10

25. In comment 11 of our previous letter we requested that you tell us whether any of the natural persons having beneficial ownership of the securities registered for sale are broker/dealers or affiliates of broker/dealers. Your letter indicates that the prospectus has been revised in response to the comment. Please tell us where this information is located or provide us with the information we previously requested.

26. In comment 11, we also asked you to include the identities of the natural persons having beneficial ownership of the securities being registered. As previously requested, please identify the natural persons having beneficial ownership of the securities being registered on behalf of Ascendiant Securities, LLC and Ascendiant Capital Group, LLC.

27. The revised disclosure at the top of page 12 indicates that the table that follows presents information regarding securities exercisable before June 2, 2005. Please revise the disclosure and the table to include this information for any securities exercisable within 60 days before and after the filing date of the amendment. Please make a similar revision to the ownership table on page 17.

Security Ownership of Certain Beneficial Owners and Management - page 17

28. You have not properly disclosed the ownership information for Mercator Advisory Group, LLC in the table. You have disclosed, on page 12, that Mercator Advisory Group controls the investments of the Monarch Fund and both Mercator Momentum Funds. Thus, the number of shares attributed to Mercator Advisory Group in the table should include all of the shares attributable to each of the funds. It also appears that David F. Firestone should be identified in the table as the beneficial owner of all of the shares held by the funds and the group. Please revise the table and the footnotes accordingly.

29. Currently, the footnotes contain "estimates" of the number of shares that may be acquired upon exercise of options. Please revise the table and the footnotes to show the exact number of shares that may be acquired by each named person upon the exercise of their stock options.

30. Please also revise the table and the footnotes to show the exact number of shares that can be acquired by each named person upon the exercise of warrants or the conversion of convertible securities. Where convertible securities are convertible based on the current price of your stock, provide the ownership information based on the most recent practicable stock price with appropriate calculations presented in the footnotes. Please make similar changes to the selling securityholder information on page 10.

Preferred Stock - page 19

31. Please refer to comment 17 in our previous letter. Although you state that the prospectus was revised in response to the comment, we are unable to locate any information regarding a dividend preference. Please revise or advise as we previously requested.

Description of Business - page 22

32. Please delete the third sentence of the third paragraph under this heading. It is a conclusory statement unsupported by facts.

33. Please also delete the next to last sentence of the first paragraph under "Related Developments" on page 23. It to is a conclusory statement unsupported by facts.

34. On page 23, in the third paragraph under "Recent Developments," you state that you expect to expand the clinical trials for SaveCream over 2005 and that this will "open the door to commercialization opportunities" for SaveCream by late 2006. You have not yet filed an IND for this proposed product, and you do not appear to have the funds to do so. Accordingly, these statements are inappropriate. Please delete them.

35. In the last paragraph on page 23 you state that you have agreed with the FDA on a "large animal model protocol" to establish pharmacological safety with relation to cardiovascular and central nervous system toxicity" for your pending IND application and expect to begin that phase of the testing in the very near future and to start Phase I clinical trials in cystic fibrosis in the fourth quarter of 2005. Given your current financial condition and lack of funds, it is not clear how you intend to do this. Please identify the source of funds you will use to do this and how much you anticipate it will cost. If you are unable to provide this information, please delete the statements regarding the timing of your research activities.

36. In a number of places in your revised disclosure you make claims regarding the size of markets, side-effects of existing products and other statistical claims. See, for example, the third paragraph on page 26, the third paragraph on page 27 and the last three paragraphs on page 29. Please provide us with factual support for each claim you make, including copies of the documents you are relying on in making the claims. Mark the supporting documents to show the specific location of the information underlying each claim. We may have further comment after reviewing the supporting documents.

37. Please refer to the bullets at the bottom of page 27. Please revise this and all other instances where you have stated that your proposed products have been shown, demonstrated or otherwise suggested that any of your product candidates is safe or effective, including the last sentence on page 28 and the last sentence of the carryover paragraph at the top of page 29 and all of the disclosure under "Potential Benefits of SaveCream in Treating ER-Positive Breast Cancers" on page 30. These conclusions are for the FDA or similar foreign regulatory authority to make. Additionally, when referring to the FDA or other regulatory authority`s finding you should state that the candidate is sufficiently safe or effective as they do not declare a product to be safe. We will note object if you disclose that a candidate was well tolerated or demonstrated positive results.

38. Please refer to comment 22 in our previous letter. We are unable to locate the revised disclosure. Please advise us where it is located or revise as we previously requested.

39. Please revise your discussion of patents to explain what a "method patent" is. Also, we are unable to locate the revisions you made in response to comment 23, except for the duration of the patents. Please provide the remainder of the information we requested in that comment.

Liquidity and Capital Resources - page 38

40. In the second paragraph under this heading you refer to making "the second installment on our purchase of the SaveCream assets." We are unable to locate any discussion of these installment payments in conjunction with your description of the acquisition. Please discuss your purchase arrangement in greater detail, quantifying the disclosure to the extent practicable. We may have additional comments after reviewing your response.

41. We note that your agreement to acquire these assets has not been filed as an exhibit to the registration statement. Please include it in your next amendment. In addition, please expand the discussion in the business section to include a discussion of all of the material provisions of that agreement.

42. Please provide factual support for your claim that you have sufficient capital on hand to complete Phase I clinical trials for cystic fibrosis. We note, in this regard, that the FDA has not approved the IND, although it has been pending for an extended period of time, and has apparently required you to conduct additional pre-clinical studies in order to consider it further.

Related Party Transactions - page 40

43. Please refer to comment 19 in our previous letter. The revised disclosure does not disclose the period of time over which the expenses were rendered or accrued. Please revise as we previously requested.

44. Please reconcile the amount payable to your CEO listed here with the amount disclosed in footnote a. on page 42.

45. Please refer to comment 20 in our previous letter. We are unable to find the location of the discussion of the terms of the oral agreement between the company and Ms. Robinett. Please revise the disclosure as we previously requested.

46. The revised disclosure in this section does not include all of the information specified in Item 404 of Regulation S-B. For each identified transaction, include the name of the person, including the stockholders to whom you owe money, the nature of the person`s interest in the transaction and the amount of each such interest.

Part II
Item 26. Recent Sales of Unregistered Securities

47. We note that you made sales of securities in March in private placements in addition to the sale of convertible preferred securities currently discussed in the prospectus. Please expand the disclosure in the MD&A section to discuss these sales in reasonable detail. Also, the revised disclosure in this section should identify the persons to whom you sold the securities and clarify the claimed exemption from registration and the facts relied upon to make the exemption available. It appears that you are claiming reliance on Rule 144 for exemption from registration.

Signatures

48. We have noted your response to comment 29. Please refer to the Instructions for signatures in the Form SB-2 and revise as we previously requested.

Financial Statements - December 31, 2004

Independent Auditors` Report, page F-3

49. Please include, in the filing, the audit report of the other auditors dated March 20, 2000 referred to by Eide Bailly LLP rather than the one dated March 6, 1999.

Notes to Financial Statements, page F-10

Note A - Significant Accounting Policies, page F-8

Other Income, page F-10

50. Please refer to your June 2, 2005 response to comment 27:

* Tell us when the individual released you from the liability and, if not during 2003, how recording the $219, 000 in your 2003 financial statements complies with GAAP.
* Tell us when the applicable statutes of limitation expired and why recording the $319,828 in your 2003 financial statements complies with GAAP. Further tell us why the expiration of statute of limitation judicially releases you from the debt. Please confirm that the amount does not escheat to the state.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested supplemental information. Detailed cover letters greatly facilitate our review. We may have additional comments after reviewing your amendment and responses to our comments.

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 direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please

provide
this request at least two business days in advance of the
requested
effective date and allow adequate time after the filing of any
amendment for further review before submitting a request for
acceleration. .

You may contact Keira Ino at 202-551-3659 or James Rosenberg
at
202-551-3679 if you have questions regarding comments on the
financial statements and related matters. Please contact Mary K.
Fraser at 202-551-3609 or me at 202-551-3710 with any other
questions.

Regards,

Jeffrey P. Riedler
Assistant Director

Cc: Stephen R. Drake, Esq.
Stoel Rives LLP
101 S. Capitol Boulevard - Suite 1900
Boise, ID 83702-7705
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