



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

January 3, 2011

Andrew L. Pearlman
President and Chief Executive Officer
Medgenics, Inc.
8000 Towers Crescent Drive, Suite 1300
Vienna, VA 22182

**Re: Medgenics, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed December 16, 2010
File No. 333-170425**

Dear Dr. Pearlman:

We have reviewed your amended registration statement and response letter, each filed December 16, 2010, and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Summary Financial Data, page 7

1. Please refer to your response to our prior comment 12. Please revise the loss amount for both the period ended September 30, 2010 and the year ended December 31, 2008 to reflect the amounts as negative numbers to be consistent with the consolidated statements of operations.

Capitalization, page 30

2. Please refer to your response to our prior comment 19. Please confirm that you will also include disclosure in Summary Financial Data on pages seven and eight explaining the impact of either the discount or incremental warrant issuance. Please disclose the information you provided in the second and third paragraphs of your response in MD&A.

3. Please refer to your response to our prior comment 20. Please revise your disclosure here, in Dilution and in Summary Financial Data to clarify that the payment to Yisum will be triggered by the closing of the offering and therefore the impact has been included as a pro forma adjustment.

Selected Financial Data, page 34

4. Please revise your presentation to include the pro forma balance sheet data you include in Summary Financial Data or explain to us why it is appropriate to present this pro forma information only in Summary Financial Data.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Liquidity and Capital Resources

Sources of Liquidity, page 39

5. You added disclosure in response to comment 21 indicating that your board of directors has the ability to repeal the bylaw provision restricting your ability to borrow funds if your stock becomes listed on the New York Stock Exchange, the NYSE Amex or NASDAQ. Please revise your disclosure to clarify your board's intent should this offering be successfully completed. In addition, if your board has not definitively decided to repeal this bylaw provision, please disclose whether the conversion of the 2009 and 2010 Debentures into common stock in conjunction with this offering increases the amount of future borrowings permitted under this provision.

Critical Accounting Policies

Convertible Debentures, page 42

6. Please revise your disclosure to clarify that you also irrevocably elected to measure the 2010 Debentures at fair value. Please clarify that the \$1.4 million recorded during the nine month period ended September 30, 2010 also includes the change in fair value for the 2010 Debentures.

Business, page 45

7. We note your response to our prior comment 22. It appears that you have filed as exhibits numerous agreements as material agreements pursuant to Item 601(b)(10) of Regulation S-K. These agreements include various service and consulting agreements. Please further advise us as to the basis for your conclusion that the agreements are material and therefore required to be filed as exhibits under Item 601 of Regulation S-K, yet the company is not dependent upon such agreements. Further, please reconcile your conclusion that you are not dependent upon the manufacturing, research, clinical trial

services and consulting service of any other third parties with your disclosure in the risk factor titled “*Potential difficulty with, and delays in, obtaining vectors...*” on page 12 regarding your dependence upon a single producer of specific vectors.

Executive Compensation, page 77

8. Please update your executive compensation disclosure to include discussion of compensation paid during your fiscal year ended December 31, 2010.
9. We note your response to our prior comment 29 and your risk factor disclosure included on page 9. Please specifically describe in the Executive Compensation section the severance benefits payable under Israeli law and your contribution to any such funds from which these benefits are payable.

Notes to Financial Statements

Note 1: - General, page F-15

10. Please refer to your response to our prior comment 32. Please revise your disclosure, consistent with your response, to indicate that the research and development costs related to Biopump have already been incurred. In addition, please revise your disclosure to clarify what you mean by the statement that “[t]he funds are not conditional.” In this regards, it appears that the receipt of the funds is conditioned on you having incurred costs on the project.

Note 9: - Stockholders’ Equity, page F-30

11. Please revise your tables of options and warrants in Notes e and f to separately disclose the activity from December 31, 2009 through September 30, 2010.
12. In Note h.4., you disclose that you used expected volatilities ranging from 54% to 77% to value the compensation associated with the extension, in September 2010, of the expiration dates of certain warrants and options. Please explain to us why these expected volatilities are reasonable in light of your use of a 115% expected volatility rate in 2009 as disclosed in Note 2.o. In addition, please revise your disclosure to clarify whether any future compensation will be recorded related to the warrant and option modifications. If so, please disclose the unearned compensation at September 30, 2010 that will be recorded in the future and the period(s) over which it will be recorded. If not, please disclose why not.
13. Please refer to your response to our prior comment 35. We note that the only caption you changed in the Statements of Changes in Stockholders’ Equity (Deficit) was for the activity in 2010. However, it appears that compensation expense related to both warrants and options in other periods as well. Therefore, please revise the captions in your

Statements of Changes in Stockholders' Equity (Deficit) for all applicable periods to attribute compensation to both options and warrants or explain to us how your presentation is appropriate.

Note 10: - Convertible Debentures, page F-43

14. Please clarify whether the \$81 recorded as a result of the change in the fair value of the 2009 Debentures was recorded as financial expense as opposed to financial income.
15. Please refer to your response to our prior comment 36. Please expand your disclosure on page F-24 to clarify that the Binomial model was used to fair value the warrants since the current disclosure only refers to the convertible debentures. Also please clarify whether the warrant liability is also valued using Level 3 inputs and whether the assumptions disclosed for the convertible debentures were the same assumptions used for the warrants. Finally, please consider whether the policy to classify the warrants as liabilities and the resulting potential future variability in operating results should be disclosed in MD&A.
16. In Note 10.b. you disclose that you issued 1,612,500 warrants to finders in connection with your September 2010 private placement. Please explain to us why you do not apparently consider these warrants as liabilities under ASC 815-40-15-7I when they appear to be denominated in GBP and your functional currency is the US dollar.

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 the information the Securities Act of 1933 and all applicable Securities Act rules require. 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.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as 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. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Andrew L. Pearlman
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You may contact Vanessa Robertson at (202) 551-3649 or Mark Brunhofer at (202) 551-3638 if you have questions regarding comments on the financial statements and related matters. Please contact Karen Ubell at (202) 551-3873, Dan Greenspan at (202) 551-3623 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Gretchen Anne Trofa, Esq.
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