



DIVISION OF  
CORPORATION FINANCE

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

February 23, 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. 4 to Registration Statement on Form S-1  
Filed February 22, 2011  
File No. 333-170425**

Dear Dr. Pearlman:

We have reviewed your amended registration statement and response letter, each filed February 22, 2011, 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.

General

1. Please file a copy of the legal opinion to be provided by Barack Ferrazzano Kirschbaum & Nagelberg LLP prior to seeking effectiveness of the registration statement.

Capitalization, page 33

2. Please refer to our prior comment three. The first sentence of this section states that the table sets forth your cash and cash equivalents and your capitalization. Therefore, please revise the table to also include the dollar amount for total capitalization.
3. Please refer to our prior comment four. Please revise your disclosure to clarify that the pro forma information for the 2009 Debentures reflects the effect of the discount. This comment also applies to the Summary Financial Data and the Selected Financial Data sections.

Dilution, page 35

4. Please refer to our prior comments five and six. Please explain why the number of shares used to calculate pro form net tangible book value per share before revaluations and this offering includes the number of shares upon conversion of the debentures and the number of shares upon closing of the offering.

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.

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.  
Barack Ferrazzano Kirschbaum & Nagelberg LLP  
200 West Madison Street  
Suite 3900  
Chicago, IL 60606