



DIVISION OF  
CORPORATION FINANCE

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

November 4, 2013

Via E-mail

Alan J. Lewis, Ph.D.  
Chief Executive Officer  
Medistem, Inc.  
9255 Towne Centre Drive, Suite 450  
San Diego, CA 92121

**Re: Medistem, Inc.**  
**Amendment No. 1 to Registration Statement on Form 10-12G**  
**Filed October 18, 2013**  
**File No. 000-54999**

Dear Dr. Lewis:

We have reviewed your amended registration statement 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. We note your announcement on July 18, 2013 that you entered into an agreement granting Cytori Therapeutics, Inc. a license and exclusive rights to use your U.S. patent no. 8,241,621, "Stem Cell Mediated Treg Activation" in the U.S. Under the appropriate section in your filing, please describe the material terms of the agreement with Cytori Therapeutics, Inc., including the nature and scope of the intellectual property transferred, the parties' rights and obligations, duration of the agreement, termination provisions, up-front payments, aggregate amounts received to date under the agreement, aggregate potential milestones payments to be received in the future and royalty rates. Also, please file the agreement as an exhibit pursuant to Item 601(b)(10) of Regulation S-K.

Type I Diabetes Program, page 7

2. We note your expanded disclosure in response to our prior comment 12. Please revise your disclosure to provide the duration of the license agreement with Yale University.

Item 1A. Risk Factors

Risks Related to our Business

Inadequate internal controls and accounting practices could lead to errors..., page 11

3. We note your response to our prior comment 14 disclosing the material weaknesses that were identified and recent remedial measures you implemented in order to address the weaknesses. Please expand your disclosure to describe any effect that these weaknesses had on your financial statements.

Item 5. Directors and Executive Officers

Executive Officers, page 27

4. We note your response to our prior comment 19. Please revise your Form 10 to clarify that Donald Dickerson effectively functions as your Chief Accounting Officer/Controller.

Item 7. Certain Relationships and Related Transactions, page 32

5. Please specify the nature and extent of the ownership interests in Unicell Bio International that were contributed to the company on September 18, 2013, the identity of the parties who contributed the interests, any consideration received and the percentage ownership in Unicell now held by the company. Please also specify the nature and extent of Unicell's ownership interest in ER Cell. Finally, please file as exhibits any transaction documents governing and/or memorializing the September 18 contribution.

You may contact Johnny Gharib at (202) 551-3170, Daniel Greenspan at (202) 551-3623 or me at (202) 551-3715 with any questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler  
Assistant Director

cc: Via E-mail  
Hayden J. Trubitt, Esq.  
Stradling Yocca Carlson & Rauth  
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