



DIVISION OF
CORPORATION FINANCE

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

March 10, 2011

Yaky Yanay
Chief Financial Officer
(Principal Financial and Accounting Officer)
Pluristem Therapeutics, Inc.
MATAM Advanced Technology Park
Building No. 20
Haifa, Israel 31905

Re: Pluristem Therapeutics, Inc
Form 10-K for Fiscal Year Ended June 30, 2010
Filed September 21, 2010
File No. 001-31392

Dear Mr. Yanay:

We have reviewed your filing and have the following comments. In some of our comments, we ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information or by advising us when you will provide the requested response. If you do not believe a comment applies to your facts and circumstances, please tell us why in your response. Please furnish us a letter on EDGAR under the form type label CORRESP that keys your responses to our comments.

After reviewing the information provided, we may raise additional comments and/or request that you amend your filing.

Intellectual Property, page 7

1. Please provide proposed draft disclosure for inclusion in future filings detailing additional information about your material patents including the number of pending and issued patents you own and the range of expiration dates for the patents.

Business Experience, page 27

2. Please provide proposed draft disclosure for inclusion in future filings discussing the specific experience, qualifications, attributes or skills that led to the conclusion that each director should serve on your company's board, as required by Item 401(e)(1) of Regulation S-K.

Notes to Consolidated Financial Statements

Note 7: - Share Capital and Stock Options, page F-29

3. The warrant agreements for certain of your warrant issuances indicate that the exercise prices are subject to adjustment in the event that you issue equity at a price per share less than the volume weighted average price at the record date. Please explain to us why you have not apparently reclassified these warrants to liabilities effective July 1, 2009 under FASB ASC 815-40-15 with transition guidance at FASB ASC 815-10-65-3. In addition, it appears that some of the warrants were issued in connection with registered unit offerings. Please confirm that those warrants have been classified as liabilities or tell us why liability classification is not required.

Item 9A. Controls and Procedures

Management's Report on Internal Control Over Financial Reporting, page 26

4. We note that you conduct substantially all of your operations outside of the United States. In order to enhance our understanding of how you prepare your financial statements and assess your internal control over financial reporting, we ask that you provide us with information that will help us answer the following questions.
 - **How do you evaluate and assess internal control over financial reporting?**
 - In connection with your process to determine whether your internal control over financial reporting was effective, please describe whether and how you considered controls to address financial reporting risks that are relevant to all locations where you have operations.
 - If you have an internal audit function, please describe it and explain how, if at all, that function impacted your evaluation of your internal control over financial reporting.
 - **How do you maintain your books and records and prepare your financial statements?**
 - If you maintain your books and records in accordance with U.S. GAAP, describe the controls you maintain to ensure that the activities you conduct and the transactions you consummate are recorded in accordance with U.S. GAAP.
 - If you do not maintain your books and records in accordance with U.S. GAAP, tell us what basis of accounting you use and describe the process you go through to convert your books and records to U.S. GAAP for SEC reporting. Describe the controls you maintain to ensure that you have made all necessary and appropriate adjustments in your conversions and disclosures.
 - **What is the background of the people involved in your financial reporting?**
 - We would like to understand more about the background of the people who are primarily responsible for preparing and supervising the preparation of your financial statements and evaluating the effectiveness of your internal control over financial reporting and their knowledge of U.S. GAAP and SEC rules and regulations. Do not identify people by name, but for each person, please tell us:
 - what role he or she takes in preparing your financial statements and evaluating the effectiveness of your internal control;
 - what relevant education and ongoing training he or she has had relating to U.S. GAAP;

- the nature of his or her contractual or other relationship to you;
- whether he or she holds and maintains any professional designations such as Certified Public Accountant (U.S.) or Certified Management Accountant; and
- about his or her professional experience, including experience in preparing and/or auditing financial statements prepared in accordance with U.S. GAAP and evaluating effectiveness of internal control over financial reporting.
- If you retain an accounting firm or other similar organization to prepare your financial statements or evaluate your internal control over financial reporting, please tell us:
 - the name and address of the accounting firm or organization;
 - the qualifications of their employees who perform the services for your company;
 - how and why they are qualified to prepare your financial statements or evaluate your internal control over financial reporting;
 - how many hours they spent last year performing these services for you; and
 - the total amount of fees you paid to each accounting firm or organization in connection with the preparation of your financial statements and in connection with the evaluation of internal control over financial reporting for the most recent fiscal year end.
- If you retain individuals who are not your employees and are not employed by an accounting firm or other similar organization to prepare your financial statements or evaluate your internal control over financial reporting, do not provide us with their names, but please tell us:
 - why you believe they are qualified to prepare your financial statements or evaluate your internal control over financial reporting;
 - how many hours they spent last year performing these services for you; and
 - the total amount of fees you paid to each individual in connection with the preparation of your financial statements and in connection with the evaluation of internal control over financial reporting for the most recent fiscal year end.
- Please describe your audit committee financial expert's qualifications, including the extent of his or her knowledge of U.S. GAAP and internal control over financial reporting.

You may contact Tabatha Akins, Staff Accountant (202) 551-3658 or Mary Mast, Senior Staff Accountant at (202) 551-3613 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. Please contact Michael Rosenthal, Attorney Advisor at (202) 551-3674 or Sebastian Gomez Abero, Attorney Advisor at (202) 551-3578 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