



DIVISION OF
CORPORATION FINANCE

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

December 15, 2010

William M. Caldwell, IV
Advanced Cell Technology, Inc.
381 Plantation Street
Worcester, MA 01605

**Re: Advanced Cell Technology, Inc.
Registration Statement on Form S-1, Post Effective Amendment No. 1
Filed December 10, 2010
File No. 333-162435**

Dear Mr. Caldwell:

We have limited our review of your registration statement to the issue we have addressed in our comment. In our comment, 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. Where you do not believe our comment applies 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 this comment, we may have additional comments.

1. We note the following statement on page F-42, "Between September 29, 2008 and January 20, 2009, the Company *was ordered* by the Circuit Court...for Sarasota County, Florida to settle certain past due accounts payable, for previous professional services and other operating expenses incurred, by the issuance of shares of its common stock." It appears from publicly available court records that the court did not in fact order a settlement but that the company voluntarily entered into a settlement that was later approved by the court pursuant to a court order. It appears that the form of payment and the number of shares was determined through your negotiations and that the court did not determine the amount or form of payment. Please revise your disclosure to more clearly describe the sequence of events. Additionally, to the extent that you had any relationship with the companies providing professional services or entered into other transactions with these companies, either prior to these transactions or subsequent to these transactions, please describe these relationships and/or transactions.

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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company 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 staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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.

Please contact Johnny Gharib at (202) 551-3170 or me at (202) 551- 3715 with any questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Thomas A. Rose, Esq.
Sichenzia Ross Friedman Ference LLP
61 Broadway, 32nd Floor
New York, New York 10006