



DIVISION OF
CORPORATION FINANCE

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

October 18, 2012

Via E-mail

Gary Rabin

Chief Executive Officer and Chairman of the Board of Directors

Advanced Cell Technology, Inc.

33 Locke Drive

Marlborough, MA 01752

**Re: Advanced Cell Technology, Inc.
Registration Statement on Form S-1
Filed October 5, 2012
File No. 333-184321**

Dear Mr. Rabin:

We have limited our review of your registration statement to those issues we have addressed in our 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. Where 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 from your prior correspondence in relation to the review of your Form 10-K for the fiscal year ended December 31, 2011 that you will be amending your Form 10-K to provide revised and additional disclosure. Please also amend your registration statement to ensure that the changes you have made to the disclosure in Form 10-K are also reflected in the disclosure for your registration statement.

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2. We note your disclosure that you have been named as a defendant in a civil action brought by the Securities and Exchange Commission related to transactions involving the sale and issuance of the Company's securities. Please revise your disclosure to clarify that you are alleged to have violated Section 5(a) and 5(c) of the Securities Act of 1933 because the sale and issuance of securities to which you refer were neither registered

under the Securities Act nor subject to an exemption from registration under Section 3(a)(10). In addition, please disclose that you are alleged to have violated Section 13(a) of the Exchange Act of 1934 because the sale and issuance of securities to which you refer were not disclosed on a timely basis in Current Reports filed with the Securities and Exchange Commission. Please include this revised disclosure in the other sections of your registration statement in which you refer to the civil action brought by the SEC. Please also confirm that you will make conforming changes to your disclosure in your next 34 Act filing.

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.

Gary Rabin
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Please contact Bryan Pitko at (202) 551-3203 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: David B. Manno, Esq.
Jeff Cahlon, Esq.
Sichenzia Ross Friedman Ference LLP