



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

DIVISION OF  
CORPORATION FINANCE

December 8, 2010

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

**Re:   Advanced Cell Technology, Inc.**  
**Form 10-K for the Fiscal Year Ended December 31, 2009**  
**Filed March 16, 2010**  
**File Number: 000-50295**

Dear Mr. Caldwell:

We have completed our review of your filings and do not have any further comments at this time.

Sincerely,

Jeffrey P. Riedler  
Assistant Director