

ADVANCED CELL TECHNOLOGY, INC.  
 Form 424B3  
 March 03, 2011  
 SUPPLEMENT No. 1  
 DATED March 3, 2011  
 (To Prospectus dated December 23, 2010)

Rule 424(b)(3)  
 Registration No. 333- 162435

ADVANCED CELL TECHNOLOGY, INC.

This prospectus supplement (“Supplement”) modifies, supersedes and supplements information contained in, and should be read in conjunction with, that certain prospectus, dated December 23, 2010 (“Prospectus”), of Advanced Cell Technology, Inc. (“Company”). This Supplement is not complete without, and may not be delivered or used except in connection with, the original Prospectus.

The information attached to this Supplement modifies and supersedes, in part, the information in the Prospectus. Any information that is modified or superseded in the Prospectus shall not be deemed to constitute a part of the Prospectus, except as modified or superseded by this Supplement.

We may amend or supplement the Prospectus from time to time by filing amendments or supplements as required. You should read the entire Prospectus and any amendments or supplements carefully before you make an investment decision.

See “Risk Factors” beginning on page 6 of the prospectus dated December 23, 2010, for risk factors and information you should consider before you purchase shares.

SELLING SECURITY HOLDERS

The information appearing in the table below with respect to the selling securityholders named herein supersedes the information with respect to selling securityholders in the table appearing under the heading “Selling Security Holders” in the Prospectus.

| Name of Selling Security Holder      | Beneficial Ownership Before the Offering | Share of Common Stock Included in Prospectus | Beneficial Ownership After the Offering | Percentage of Ownership After Completion of Offering |
|--------------------------------------|--|--|---|--|
| Portside Growth and Opportunity Fund | 3,763,052                                | 3,094,260(1)                                 | 668,792                                 | *  |
| Warrant Strategies Fund, LLC         | 493,399                                  | 493,399(1)                                   | 0                                       | *  |

\* Less than 1%.

(1) Represents shares of common stock issuable upon exercise of amended and restated warrants.