



DIVISION OF  
CORPORATION FINANCE

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

October 7, 2010

J. Donald deBethizy  
Chief Executive Officer and President  
Targacept, Inc.  
200 East First Street, Suite 300  
Winston-Salem, North Carolina  
27101

**Re: Targacept, Inc.**  
**Form 10-K for the Fiscal Year Ended December 31, 2009**  
**Filed March 11, 2010**  
**File No. 000-51173**

**Definitive Proxy Statement**  
**Filed April 16, 2010**

Dear Dr. deBethizy:

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

Sincerely,

Jeffrey Riedler  
Assistant Director