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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 8-K**

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**CURRENT REPORT**  
**Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): September 21, 2009

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**TARGACEPT, INC.**

(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation)

**000-51173**  
(Commission File Number)

**56-202050**  
(IRS Employer  
Identification No.)

**200 East First Street, Suite 300**  
**Winston-Salem, North Carolina**  
(Address of principal executive offices)

**27101**  
(Zip Code)

**(336) 480-2100**  
Registrant's telephone number, including area code

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
  - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
  - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
  - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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**Item 1.01 Entry into a Material Definitive Agreement.**

Targacept, Inc. (“**Targacept**”) and University of South Florida Research Foundation, Inc. (“**USFRF**”) entered into an amendment to the Amended and Restated License Agreement between Targacept and USFRF dated March 9, 2004 (the “**Agreement**”) effective September 21, 2009 (the “**Amendment**”). As amended by the Amendment, the Agreement no longer provides for USFRF to have the right to convert Targacept’s exclusive license under the Agreement to patent rights of USFRF related to Targacept’s product candidate TC-5214 to a non-exclusive license if Targacept has not filed a new drug application or foreign equivalent for a product covered by the licensed patent rights by December 31, 2012 or any other particular date. The Amendment also: (1) clarifies that reimbursement of certain patent-related expenses received by Targacept, if any, from a potential future sublicensee for a sublicense to the licensed patent rights would be excluded from those amounts that Targacept is obligated to pay a percentage of to USFRF; (2) clarifies that amounts based on the achievement of milestone events received by Targacept, if any, from a potential future sublicensee for a sublicense to the licensed patent rights would be included in those amounts that Targacept is obligated to pay a percentage of to USFRF; and (3) makes other technical or clarifying amendments.

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**TARGACEPT, INC.**

Date: September 25, 2009

/s/ Alan A. Musso

Alan A. Musso

Vice President, Chief Financial Officer and Treasurer