

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

Current Report Pursuant to Section 13 or 15(d) of
the Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): August 10, 2009

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or Other Jurisdiction of Incorporation)

000-51476

(Commission File Number)

20-2903526

(I.R.S. Employer Identification No.)

248 Route 25A, No. 2, East Setauket, New York

(Address of Principal Executive Offices)

11733

(Zip Code)

631-942-7959

(Registrant's Telephone Number, Including Area Code)

Item 1.01 Entry into a Material Agreement

Effective August 10, 2009, Lixte Biotechnology Holdings, Inc. (the “Company”) entered into Amendment No. 6 to the Cooperative Research and Development Agreement (“CRADA”) with the National Institute of Neurological Disorders and Stroke of the National Institutes of Health pursuant to which the term of the CRADA was extended from September 30, 2009 through September 30, 2011. Pursuant to the amendment, the Company has agreed to aggregate payments of \$100,000 in two installments of \$50,000 each payable on October 1, 2010 and January 5, 2011, inclusive of any prior unpaid commitments.

Item 9.01 Financial Statements and Exhibit

(d) Exhibits

Exhibit 10.1 Amendment 6 to CRADA

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.

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

Date: August 12, 2009

By: /s/ John S. Kovach

John S. Kovach, Chairman of the Board and
Chief Executive Officer (principal executive officer)

AMENDMENT 6

Current CRADA TERMS:

CRADA # 02165
Effective Date: 3/22/2006
Executed Date: 3/22/2006
Original Term: 24 months
(Extended to 27 months in Amendment 4
Extended to September 30, 2009
in Amendment 5)
New Term: 66 months
Current Expiration Date: 9/30/2009
Original Expiration Date: 3/22/2008
New Expiration date: 9/30/2011

NIH PIs: Dr. Russell Lonser

Institute: NINDS

Collaborator PI: Dr. John Kovach

Collaborator: Lixte Biotechnology
Holdings, Inc.

CRADA Title: Identification of agents regulating Nuclear Receptor Corepressor (N-CoR) pathway for glioma tumor cell differentiation

The purpose of this amendment is to change certain terms of the above referenced Cooperative Research and Development Agreement (CRADA). These changes are reflected below and except for these changes, all other provisions including the Research Plan of the original CRADA and the five previous amendments remain in full force and effect. Each signatory will receive an original of this amendment. Text to be added to the original CRADA is indicated by underlining.

NEW TERMS:

1. Extend the term of the CRADA to September 30, 2011
2. Modify the Research Plan, Appendix A on page 22 as follows:

SNB/NINDS Laboratory will:

- 1) Adapt the assay currently used in SNB/NINDS to a high throughput assay for the identification of agents active against GBMs.
- 2) Screen agents for anti-proliferative activity against GBMs.
- 3) Screen selected agents that are positive in the anti-proliferative assay in Glial Fibrillary Acidic Protein (GFAP) confirmatory assay.
- 4) Analyze samples from GBM patients to determine if level of and localization of expression of N-CoR in tumor samples, serum or CSF correlates with prognosis of patients with GBM.
- 5) Conduct preliminary animal studies of selected agents, if mutually agreed upon.

6) If mutually agreed upon, screen agents that are positive in item 2 above for activity in other CNS tumor cell lines.

7. If mutually agreed upon, screen agents identified in item 2 above for synergistic activity with other commercially available anti-cancer agents, including but not limited to temozolomide and andriamycin.

3. Delete the "Funding Contributions" section in Appendix B and replace with the following:

Funding Contributions:

The Parties agree that no further funds are due until Oct. 1, 2010. Collaborator agrees to provide funds in the amount of one hundred thousand dollars (\$100,000) in two installments. The first installment of fifty thousand (\$50,000) is due on Oct. 1, 2010; the second installment of fifty thousand (\$50,000) is due on January 5, 2011.

Collaborator agrees to provide funds for ICD to use to acquire technical, statistical, and administrative support for the research activities, as well as to pay for supplies and travel expenses. Collaborator agrees that ICD can allocate the funding between the various categories in support of the CRADA research as ICD's PI sees fit.

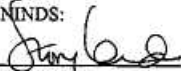
4. Modify Article 10.5 as follows:

10.5 **New Commitments.** Neither Party will incur new expenses related to this CRADA after expiration, mutual termination, or a notice of a unilateral termination and will, to the extent feasible, cancel all outstanding commitments and contracts by the termination date. Collaborator acknowledges that ICD will have the authority to retain and expend any funds for up to ~~one (1)~~ two (2) years subsequent to the expiration or termination date to cover any unpaid costs obligated during the term of the CRADA in undertaking the research and development activities set forth in the Research Plan.

SIGNATURES BEGIN ON THE NEXT PAGE

ACCEPTED AND AGREED TO

FOR MINDS:



Story Landis, Ph.D.
Director, The National Institute of Neurological Disorders and Stroke

Date 25 8/6/09

FOR COLLABORATOR:



Dr. John S. Kozlowski
President, Lexte Biotechnology Holdings, Inc.

Date August 10, 2009

