

UNITED STATES
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):

MAY 15, 2008

XENOMICS, INC.
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

FLORIDA
(STATE OR OTHER JURISDICTION OF INCORPORATION)

333-103083 (COMMISSION FILE NUMBER) 04-3721895 (I.R.S. EMPLOYER IDENTIFICATION NO.)

420 LEXINGTON AVENUE, SUITE 1701
NEW YORK, NEW YORK 10170
(ADDRESS OF PRINCIPAL EXECUTIVE OFFICES)

(212) 297-0808
(REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE)

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 (SEE General Instruction A.2. below):

- 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))

ITEM 1.01 ENTRY INTO MATERIAL DEFINITIVE AGREEMENT.

Subsequent to the approval of all of the disinterested members of the Board of Directors, Xenomics, Inc. (the "Company") and Gian Luigi Longinetti-Buitoni, the Executive Chairman of the Company ("Lead Investor") entered into Amendment No. 5 (the "Amendment"), dated as of May 15, 2008, to the Warrant and Put Option Agreement originally dated as of November 30, 2006 (the "Agreement"), as amended August 29, 2007, October 30, 2007, February 25, 2008 and April 11, 2008 ("Warrant and Put Option Agreement"), pursuant to which the Amendment extended to June 1, 2008, the date on which the Company may, at its sole discretion, exercise a put option (the "Put Option") pursuant to which it may require the Lead Investor to invest in the Company up to an additional \$1,500,000 to purchase the Maximum Put Amount of Units at a purchase price of \$.55 per share of common stock, par value \$0.0001 (the "Shares"). Upon notification on or before June 1, 2008, the Lead Investor shall purchase the number of Units specified in such notice by June 2, 2008 up to the Maximum Put Amount. The Amendment is filed as Exhibit 4.1 to this report. (Capitalized terms not otherwise defined herein are given the meaning ascribed to them as set forth in the Amendment).

ITEM 9.01 FINANCIAL STATEMENTS AND EXHIBITS.

(c) Exhibits.

4.1 Form of Amendment No. 5 to Warrant and Put Option Agreement dated May 15, 2008.

SIGNATURE

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.

XENOMICS, INC.

Date: May 21, 2008

By: /s/ Gian Luigi Longinotti-Buitoni

Gian Luigi Longinotti-Buitoni
Executive Chairman

This AMENDMENT NO. 5 (the "Fifth Amendment ") to the WARRANT AND PUT OPTION AGREEMENT (the "Agreement") originally dated as of November 30, 2006, by and between Gian Luigi Longinotti-Buitoni (the "Lead Investor"), and Xenomics, Inc. (the "Company"), as amended August 29, 2007, October 30, 2007, February 25, 2008, and April 11, 2008, is dated as of May 15, 2008.

WITNESSETH:

WHEREAS, on November 30, 2006, the Lead Investor and the Company entered into the Agreement and amended such Agreement on August 29, 2007, October 30, 2007, February 25, 2008 and April 11, 2008; and

WHEREAS, the Lead Investor and the Company desire to amend Section 3(b) of such Agreement in order to preserve the Company's right to exercise the Maximum Put Amount until June 1, 2008.

NOW, THEREFORE, in consideration of and for the mutual promises and covenants contained herein, and for other good and valuable consideration, the receipt of which is hereby acknowledged, the Agreement is hereby amended as follows:

1. Section 3(b)(ii) shall be replaced in its entirety with the following:

"Since the Financing Condition has not been met, at the Company's sole discretion, upon written notice from the Company on or before June 1, 2008, by June 2, 2008 (the "Put Closing Date"), the Lead Investor shall purchase the number of Units specified in such notice up to the Maximum Put Amount divided by the applicable Exercise Price, i.e. \$.55 per share. On the Put Closing Date, the Lead Investor shall surrender this Warrant and the full Exercise Price of the Units specified in the Notice in immediately available funds against the Company's delivery of Lead Investor's Securities. If less than all of the Additional Shares which may then be acquired on the exercise of this Warrant are specified in the Notice, the Company shall cancel this Warrant and issue and deliver to the Lead Investor a new Warrant for the Lead Investor's Additional Shares remaining."

2. The Company and the Lead Investor acknowledge that the Lead Investor's Warrants under Paragraph 1 of the Agreement shall be terminated other than the Lead Investor's option to purchase the Additional Shares underlying the Units referred to in Paragraph 1 herein and other than the Warrants underlying the Maximum Put Option, which the Company may "put" to the Lead Investor pursuant to Paragraph 1 hereof.

3. (A) This Fifth Amendment shall be construed and interpreted in accordance with the laws of the State of New York without giving effect to the conflict of laws rules thereof or the actual domiciles of the parties.

- (B) Except as amended hereby, the terms and provisions of the Agreement shall remain in full force and effect, and the Agreement and Amendments Nos. 1, 2, 3 and 4 are in all respects ratified and confirmed. This Fifth Amendment replaces and substitutes for the Fourth Amendment dated as of April 11, 2008. On and after the date of this Fifth Amendment, each reference in the Amendment to the "Agreement," "hereinafter," "herein," "hereunder," "hereof," or words of like import shall mean and be a reference to the Agreement as amended by this Fifth Amendment. Capitalized terms not otherwise defined herein are given the meaning ascribed to them as set forth in the Agreement.

- (C) This Fifth Amendment may be executed in one or more counterparts, each of which shall be deemed an original and all of which taken together shall constitute a single Amendment.

4. Copies of all notices to the Company pursuant to Paragraph 14 of the Agreement shall also be sent to: Herrick, Feinstein LLP, 2 Park Avenue, New York, New York 10016, Attn: Ted D. Rosen, Esq.

IN WITNESS WHEREOF, the parties hereto have executed this Fifth Amendment as of the date stated above.

LEAD INVESTOR

By:

Gian Luigi Longinotti-Buitoni

XENOMICS, INC.

By:

Name: Gian Luigi Longinotti-Buitoni
Title: Executive Chairman