

**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 17, 2012

CORTEX PHARMACEUTICALS, INC.

(Exact Name of Registrant as Specified in Charter)

Delaware
**(State or Other Jurisdiction
of Incorporation)**

001-16467
**(Commission
File Number)**

33-0303583
**(I.R.S. Employer
Identification No.)**

15241 Barranca Parkway, Irvine, California
(Address of Principal Executive Offices)

92618
(Zip Code)

Registrant's telephone number, including area code: (949) 727-3157

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))

Item 1.01. Entry into a Material Definitive Agreement

On May 17, 2012, Cortex Pharmaceuticals, Inc., a Delaware corporation (the “Company”), entered into a new lease agreement (the “Lease Agreement”) by and between the Company and PPC Irvine Center Investment, LLC for property located at 7700 Irvine Center Drive, Irvine, California. The Lease Agreement represents an operating lease for the Company’s principal offices consisting of approximately 5,000 square feet with a term beginning June 1, 2012 and ending May 31, 2015. The commitments under the Lease Agreement for the seven months ending December 31, 2012, the years ending December 31, 2013 and 2014 and the five months ending May 31, 2015 are approximately \$64,000, \$103,000, \$117,000 and \$49,000, respectively. Provided that the Company is in compliance with the terms and conditions of the Lease Agreement, the Company has the option to terminate the Lease Agreement at the expiration of the twelfth month or the twenty-fourth month by providing at least four months prior written notice. The Company’s current lease agreement for its laboratory and offices will expire on May 31, 2012.

The foregoing description of the Lease Agreement is qualified in its entirety by reference to the Lease Agreement, a copy of which will be filed with the Company’s Quarterly Report on Form 10-Q for the three months ended June 30, 2012.

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.

Date: May 21, 2012

CORTEX PHARMACEUTICALS, INC.

By: /s/ Maria S. Messinger

Maria S. Messinger
Vice President, Chief Financial
Officer, and Corporate Secretary