

CORTEX PHARMACEUTICALS INC/DE/  
Form 424B3  
May 22, 2007

Filed Pursuant to Rule 424(b)(3)  
Registration No. 333-112043

**PROSPECTUS SUPPLEMENT NO. 7**

(To Prospectus Dated March 18, 2004)

**CORTEX PHARMACEUTICALS, INC.**

**11,743,710 Shares of Common Stock**

**(\$0.001 par value)**

This prospectus supplement supplements information contained in that certain prospectus dated March 18, 2004 of Cortex Pharmaceuticals, Inc. (the Company), relating to the offer and sale from time to time of up to 6,909,091 shares of the Company's outstanding common stock, and up to 4,834,619 shares of the Company's common stock issuable upon exercise of warrants, which are held by certain stockholders and warrant holders named in the prospectus under the section entitled Selling Stockholders. This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the prospectus, including any amendments or supplements thereto.

The following amends and supplements the information set forth in the prospectus under the caption Selling Stockholders with respect to the selling stockholders named below, including without limitation the change of the name of D3 LifeScience Ltd. to DAFNA LifeScience Ltd., and the respective shares of common stock beneficially owned by the below-named selling stockholders that may be offered pursuant to the prospectus:

| Name                                                 | Common Stock Owned Prior to the Offering | Common Stock Being Offered Pursuant to this Prospectus | Common Stock Owned Upon Completion of this Offering | Percentage of Common Stock Owned Upon Completion of this Offering |
|------------------------------------------------------|------------------------------------------|--------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------|
| SRG Capital LLC <sup>(8)(45)</sup>                   | 54,546                                   | 54,546                                                 | 0                                                   | 0                                                                 |
| DAFNA LifeScience Ltd. <sup>(11)</sup>               | 384,894                                  | 290,909                                                | 93,985                                              | *                                                                 |
| Xmark Fund, L.P. <sup>(39)</sup>                     | 75,620                                   | 75,620                                                 | 0                                                   | 0                                                                 |
| Xmark Fund, Ltd. <sup>(40)</sup>                     | 124,380                                  | 124,380                                                | 0                                                   | 0                                                                 |
| Hudson Bay Fund, LP <sup>(45)(56)</sup>              | 216,035                                  | 35,455                                                 | 180,580                                             | *                                                                 |
| Xmark Opportunity Fund, L.P. <sup>(50)</sup>         | 302,487                                  | 227,487                                                | 75,000                                              | *                                                                 |
| Xmark Opportunity Fund, Ltd. <sup>(51)</sup>         | 367,513                                  | 292,513                                                | 75,000                                              | *                                                                 |
| Crestview Capital Master, LLC <sup>(53)</sup>        | 561,743                                  | 428,409                                                | 133,334                                             | *                                                                 |
| Vision Opportunity Master Fund, Ltd. <sup>(54)</sup> | 0                                        | 0                                                      | 0                                                   | 0                                                                 |

(8) As of the date of this prospectus supplement no. 7 to the prospectus dated March 18, 2004, SRG Capital LLC no longer owns any shares of the Company's common stock subject to such prospectus.

(11) Includes 93,985 shares subject to warrants held prior to this offering that are currently exercisable, none of which are being offered pursuant to this prospectus. As investment manager under a management agreement, DAFNA Capital Management, LLC may exercise dispositive and voting power with respect to the shares owned by DAFNA LifeScience Ltd. DAFNA Capital Management, LLC disclaims beneficial ownership of such shares. Nathan Fischel and Fariba Ghodsian are the managing members of DAFNA Capital Management, LLC. Dr. Fischel and Dr. Ghodsian disclaim beneficial ownership of the shares owned by DAFNA LifeScience Ltd. As of the date of this prospectus supplement no. 7 to the prospectus dated March 18, 2004, DAFNA LifeScience Ltd. no longer owns any shares of the Company's common stock subject to such prospectus. Percentage ownership upon completion of this offering is based on 40,012,448 shares of common stock outstanding as of March 22, 2007.

- (39) As of the date of this prospectus supplement no. 7 to the prospectus dated March 18, 2004, Xmark Fund, L.P. no longer owns any shares of the Company's common stock subject to such prospectus.
- (40) As of the date of this prospectus supplement no. 7 to the prospectus dated March 18, 2004, Xmark Fund, Ltd. no longer owns any shares of the Company's common stock subject to such prospectus.
- (45) The selling stockholder is an affiliate of a broker dealer and purchased the securities in the ordinary course of business. At the time this selling stockholder purchased the securities, it had no agreements or understandings, directly or indirectly, with any person to distribute the securities.
- (50) Consists of 302,487 shares subject to warrants held prior to this offering that are currently exercisable, of which 227,487 shares subject to warrants are being offered pursuant to this prospectus. Perceptive Life Sciences Master Fund, Ltd. assigned warrants to purchase up to 179,361 shares subject to this prospectus to Xmark Opportunity Fund, L.P., a Delaware limited partnership ( Opportunity LP ). Additionally, Xmark Fund, L.P. assigned warrants to purchase up to 48,126 shares subject to this prospectus to Opportunity LP. Xmark Opportunity Partners, LLC ( Opportunity Partners ), whose business address is 301 Tresser Boulevard, Suite 1320, Stamford, CT 06901, is the sole member of the investment manager of Opportunity LP, and, as such, possesses sole power to vote and direct the disposition of all securities of the Company held by Opportunity LP. Mitchell D. Kaye and David C. Cavalier, the Chief Executive Officer and Chief Operating Officer, respectively, of Xmark Capital Partners, LLC, the Managing Member of Opportunity Partners, share voting and investment power with respect to all securities held by Opportunity LP. Percentage ownership upon completion of this offering is based on 40,012,448 shares of common stock outstanding as of March 22, 2007.
- (51) Consists of 367,513 shares subject to warrants held prior to this offering that are currently exercisable, of which 292,513 shares subject to warrants are being offered pursuant to this prospectus. Perceptive Life Sciences Master Fund, Ltd. assigned warrants to purchase up to 210,639 shares subject to this prospectus to Xmark Opportunity Fund, Ltd., a Cayman Islands exempted company ( Opportunity Ltd ). Additionally, Xmark Fund, L.P. and Xmark Fund, Ltd. assigned warrants to purchase up to an aggregate of 81,874 shares subject to this prospectus to Opportunity Ltd. Xmark Opportunity Partners, LLC ( Opportunity Partners ), whose business address is 301 Tresser Boulevard, Suite 1320, Stamford, CT 06901, is the sole member of the investment manager of Opportunity Ltd, and, as such, possesses sole power to vote and direct the disposition of all securities of the Company held by Opportunity Ltd. Mitchell D. Kaye and David C. Cavalier, the Chief Executive Officer and Chief Operating Officer, respectively, of Xmark Capital Partners, LLC, the Managing Member of Opportunity Partners, share voting and investment power with respect to all securities held by Opportunity Ltd. Percentage ownership upon completion of this offering is based on 40,012,448 shares of common stock outstanding as of March 22, 2007.
- (53) Consists of 561,743 shares subject to warrants held prior to this offering that are currently exercisable, of which 428,409 shares subject to warrants are being offered pursuant to this prospectus. Crestview Capital Partners, LLC ( CCP ) is the sole managing member of Crestview Capital Master, LLC ( CCM ) and may be deemed to have sole voting and investment power with respect to the securities beneficially owned by CCM. CCP disclaims beneficial ownership of these securities. The Managing Members of CCP are Stewart Flink, Robert Hoyt and Daniel Warsh, each of whom may be deemed to have voting and dispositive power over securities beneficially owned by CCM, and each of whom also disclaims beneficial ownership of these securities. Mr. Flink is an affiliate of a broker-dealer and it has been confirmed to us that the securities were acquired to be resold in the ordinary course of business and that there are no arrangements with any other persons, whether directly or indirectly, to dispose of the securities. Ursus Capital, L.P. and Ursus Offshore Ltd. assigned warrants to purchase up to 97,500 shares subject to this prospectus to CCM in June 2006, DAFNA LifeScience Ltd. assigned warrants to purchase up to 189,091 shares subject to this prospectus to CCM in March 2007 and Vision Opportunity Master Fund, Ltd. assigned warrants to purchase up to 141,818 shares subject to this prospectus to CCM in May 2007. Percentage ownership upon completion of this offering is based on 40,012,448 shares of common stock outstanding as of March 22, 2007.

- (54) As of the date of this prospectus supplement no. 7 to the prospectus dated March 18, 2004, Vision Opportunity Master Fund, Ltd. no longer owns any shares of the Company's common stock subject to such prospectus.
- (56) Consists of 216,035 shares subject to warrants held prior to this offering that are currently exercisable, of which 35,455 shares subject to warrants are being offered pursuant to this prospectus. Sander Gerber, Yoav Roth and John Doscas share voting and investment power over these securities. Each of Sander Gerber, Yoav Roth and John Doscas disclaims beneficial ownership of these securities. SRG Capital LLC assigned warrants to purchase up to 35,455 shares subject to this prospectus to Hudson Bay Fund, LP in May 2007. Percentage ownership upon completion of this offering is based on 40,012,448 shares of common stock outstanding as of March 22, 2007.

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All information in this prospectus supplement is as of May 22, 2007.

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**The date of this prospectus supplement is May 22, 2007.**