

OPEXA THERAPEUTICS, INC.

FORM 424B3

(Prospectus filed pursuant to Rule 424(b)(3))

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SIC Code	2834 - Pharmaceutical Preparations
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Sector	Healthcare
Fiscal Year	12/31

PROSPECTUS SUPPLEMENT NO. 2
To Prospectus dated February 25, 2015



OPEXA THERAPEUTICS, INC.

Subscription Rights to Purchase up to 28,776,419 Units, each consisting of one share of common stock and one Warrant representing the right to purchase one share of common stock

This Prospectus Supplement No. 2 amends and supplements the prospectus dated February 25, 2015, as previously supplemented by Prospectus Supplement No. 1 dated March 9, 2015 (as supplemented, the "Prospectus"), which forms a part of our Registration Statement on Form S-1 (Registration No. 333-201731). This Prospectus Supplement is being filed to amend and supplement the information included or incorporated by reference in the Prospectus with the information contained in this Prospectus Supplement.

The Prospectus and this Prospectus Supplement relate to our distribution, at no charge, to holders of our common stock and to holders of our outstanding Series L warrants who are entitled to participate in the offering (the "Rights Offering"), as of 5:00 p.m., Eastern time, on March 13, 2015, of non-transferable subscription rights (the "Subscription Rights") to purchase up to 28,776,419 "Units," with each Unit consisting of one share of common stock and one warrant (a "Warrant") representing the right to purchase one share of common stock. The Rights Offering commenced on March 16, 2015 and the Subscription Rights will expire if they are not exercised by 5:00 p.m., Eastern Time, on April 8, 2015, which date may be extended in our sole discretion.

On March 31, 2015, we reduced the subscription price of the Subscription Rights from \$0.70 per Unit to \$0.55 per Unit. All other terms of the Rights Offering remain the same.

Holders of the Subscription Rights who have already exercised their Subscription Rights at \$0.70 per Unit will be considered to have exercised their Subscription Rights at \$0.55 per Unit and will receive an appropriate refund, without interest, within 10 business days after the Rights Offering has expired.

Our common stock is traded on The NASDAQ Capital Market under the symbol "OPXA." On March 31, 2015, the last reported sale price of our common stock was \$0.55 per share. The Subscription Rights are non-transferable and will not be listed for trading on NASDAQ or any other stock exchange or market. We have applied to list the Warrants on NASDAQ following their issuance under the symbol "OPXAW," however, there is no assurance that a sufficient number of Subscription Rights will be exercised so that the Warrants will meet the minimum listing criteria to be accepted for listing on NASDAQ. You are urged to obtain a current price quote for our common stock before exercising your Subscription Rights.

Investing in our securities involves a high degree of risk. See the section entitled "Risk Factors" beginning on page 21 of the Prospectus and in the documents we incorporate by reference into the Prospectus. You should carefully consider these risk factors, as well as the information contained in or incorporated by reference into the Prospectus, before you invest.

Pursuant to the terms of this Rights Offering, the Subscription Rights may only be exercised for a maximum of 28,776,419 Units.

	Per Unit	Total ⁽²⁾
Subscription price	\$ 0.55	\$15,827,030
Dealer-Manager fees and expenses ⁽¹⁾	\$ 0.04	\$ 1,247,460
Proceeds to us, before expenses	\$ 0.51	\$14,579,570

- (1) In connection with this Rights Offering, we have agreed to pay fees to the dealer-managers as follows: (i) to Maxim Group LLC, a cash fee equal to (a) 1% of the gross proceeds received by us directly from exercises of the Subscription Rights if the amount of such gross proceeds is less than \$6 million; (b) 4% of the gross proceeds received by us directly from exercises of the Subscription Rights if the amount of such gross proceeds is at least \$6 million but less than \$10 million; and (c) 4.5% of the gross proceeds received by us directly from exercises of the Subscription Rights if the amount of such gross proceeds is at least \$10 million; (ii) to National Securities Corporation, a cash fee equal to 2.75% of the gross proceeds received by us directly from exercises of the Subscription Rights if the amount of such gross proceeds is at least \$6 million. We have also agreed to reimburse the dealer-managers for their expenses as follows: (i) up to \$50,000 if the gross proceeds received by us directly from exercises of the Subscription Rights is less than \$6 million; and (ii) up to \$100,000 if the gross proceeds received by us directly from exercises of the Subscription Rights is at least \$6 million. See "Plan of Distribution" in the Prospectus.
- (2) Assumes the Rights Offering is fully subscribed, but excludes proceeds from the exercise of Warrants included within the Units.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this Prospectus Supplement. Any representation to the contrary is a criminal offense.

The date of this Prospectus Supplement is April 1, 2015.

This Prospectus Supplement No. 2 amends and supplements the Prospectus to reflect the reduction of the subscription price of the non-transferable Subscription Rights from \$0.70 per Unit to \$0.55 per Unit.

The Capitalization and Dilution sections on pages 52 and 53 of the Prospectus are hereby replaced by the following new Capitalization and Dilution sections (which reflect the change to the subscription price of the non-transferable Subscription Rights):

CAPITALIZATION

The following table presents our cash, cash equivalents and capitalization, as of December 31, 2014:

- on an actual basis; and
- on a pro forma as adjusted basis to give effect to the sale by us in this Rights Offering of a maximum of 28,776,419 Units (consisting of 28,776,419 shares of our common stock and Warrants to purchase an aggregate of 28,776,419 shares of common stock upon exercise), at the subscription price of \$0.55 per Unit, and our receipt of the net proceeds from that sale after deducting estimated offering expenses.

The table below does not reflect the exercise of Warrants issued in connection with the Rights Offering. The pro forma as adjusted information set forth below is illustrative only and will be adjusted based on the number of Units actually sold. You should read this information in conjunction with our consolidated financial statements and notes thereto incorporated by reference into the Prospectus.

	As of December 31, 2014	
	Actual	Pro Forma As Adjusted
	(Unaudited)	
Cash and cash equivalents	\$ 9,906,373	\$ 23,738,208
Long-term liabilities	\$ 1,230,748	\$ 1,230,748
Stockholders' equity:		
Preferred stock, no par value, 10,000,000 shares authorized; none issued and outstanding, actual or pro forma as adjusted	—	—
Common stock, \$0.01 par value, 100,000,000 shares authorized; Actual – 28,234,751 shares issued and outstanding; Pro forma as adjusted – 57,011,170 shares issued and outstanding	282,348	570,112
Additional paid-in capital	148,477,047	162,021,118
Accumulated deficit	(141,320,208)	(141,320,208)
Total stockholders' equity	\$ 7,439,187	\$ 21,271,022

The information above is as of December 31, 2014 and excludes:

- 2,423,253 shares of common stock issuable upon the exercise of stock options outstanding at December 31, 2014 with a weighted average exercise price of \$2.92 per share;
- 3,046,801 shares of common stock issuable upon the exercise of outstanding warrants at December 31, 2014 with a weighted average exercise price of \$4.08 per share;
- 1,509,479 shares of common stock available for future grants under our 2010 Stock Incentive Plan at December 31, 2014; and

- any additional shares of common stock that we may issue to Lincoln Park Capital Fund, LLC, or Lincoln Park, pursuant to a \$1,500,000 purchase agreement and a \$15,000,000 purchase agreement we entered into on November 5, 2012 and November 2, 2012, respectively, which provide that, upon the terms and subject to the conditions and limitation set forth therein, Lincoln Park is committed to purchase up to an aggregate of an additional \$15.9 million of shares of our common stock over the term of the purchase agreements, should we elect to sell shares to Lincoln Park.

DILUTION

Purchasers of our common stock in the Rights Offering (and upon exercise of the Warrants issued pursuant to the Rights Offering) will experience an immediate dilution of the net tangible book value per share of our common stock. Our net tangible book value as of December 31, 2014 was approximately \$5,543,201, or \$0.20 per share of our common stock (based upon 28,234,751 shares of our common stock outstanding). Net tangible book value per share is equal to our total net tangible book value, which is our total tangible assets less our total liabilities, divided by the number of shares of our outstanding common stock. Dilution per share equals the difference between the amount per share paid by purchasers of shares of common stock in the Rights Offering and the net tangible book value per share of our common stock immediately after the Rights Offering.

Based on the sale by us in this Rights Offering of a maximum of 28,776,419 Units (consisting of 28,776,419 shares of our common stock and Warrants to purchase an aggregate of 28,776,419 shares of common stock upon exercise), at the Subscription Price of \$0.55 per Unit, and after deducting estimated offering expenses and dealer-manager fees and expenses payable by us of \$1,995,196 and the application of the estimated \$13,831,835 of net proceeds from the Rights Offering, our pro forma net tangible book value as of December 31, 2014 would have been approximately \$19,375,036, or \$0.34 per share. This represents an immediate increase in pro forma net tangible book value to existing shareholders of \$0.14 per share and an immediate dilution to purchasers in the Rights Offering of \$0.21 per share.

The following table illustrates this per-share dilution (assuming a fully subscribed for Rights Offering of 28,776,419 Units at the Subscription Price of \$0.55 per Unit, but excluding any issuance of shares of common stock upon exercise of Warrants):

Subscription Price	\$0.55
Net tangible book value per share as of December 31, 2014, before Rights Offering	\$0.20
Increase in net tangible book value per share attributable to Rights Offering	<u>0.14</u>
Pro forma net tangible book value per share as of December 31, 2014, after giving effect to Rights Offering	<u>0.34</u>
Dilution in net tangible book value per share to purchasers	<u><u>\$0.21</u></u>

The information above is as of December 31, 2014 and excludes:

- 2,423,253 shares of common stock issuable upon the exercise of stock options outstanding at December 31, 2014 with a weighted average exercise price of \$2.92 per share;
- 3,046,801 shares of common stock issuable upon the exercise of outstanding warrants at December 31, 2014 with a weighted average exercise price of \$4.08 per share;
- 1,509,479 shares of common stock available for future grants under our 2010 Stock Incentive Plan at December 31, 2014; and

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- any additional shares of common stock that we may issue to Lincoln Park pursuant to a \$1,500,000 purchase agreement and a \$15,000,000 purchase agreement we entered into on November 5, 2012 and November 2, 2012, respectively, which provides that, upon the terms and subject to the conditions and limitation set forth therein, Lincoln Park is committed to purchase up to an aggregate of an additional \$15.9 million of shares of our common stock over the term of the purchase agreements, should we elect to sell shares to Lincoln Park.