

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**FORM S-8**  
**REGISTRATION STATEMENT**  
**UNDER**  
**THE SECURITIES ACT OF 1933**

**Zynerba Pharmaceuticals, Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**80 W. Lancaster Avenue, Suite 300**  
**Devon, PA**  
(Address of Principal Executive Offices)

**26-0389433**  
(I.R.S. Employer  
Identification No.)

**19333**  
(Zip Code)

**NON-QUALIFIED STOCK OPTION INDUCEMENT AWARD**  
(Full Title of the Plan)

**Armando Anido**  
**Chairman and Chief Executive Officer**  
**Zynerba Pharmaceuticals, Inc.**  
**80 W. Lancaster Avenue, Suite 300**  
**Devon, PA 19333**  
(Name and address of agent for service)

**(484) 581-7505**  
(Telephone number, including area code, of agent for service)

**with a copy to:**

**Rachael M. Bushey, Esq.**  
Hogan Lovells US LLP  
1835 Market Street, 29th Floor  
Philadelphia, PA 19103  
(267) 675-4675

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer  Accelerated filer   
Non-accelerated filer  (Do not check if a smaller reporting company) Smaller reporting company

**CALCULATION OF REGISTRATION FEE**

Title of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share (2)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common Stock, par value \$0.001 per share	150,000 shares	\$ 10.23	\$ 1,534,500	\$ 177.85

(1) Represents shares of common stock, \$0.001 par value per share, of the Registrant (the "Common Stock") that are issuable upon the exercise of a non-qualified stock option award granted to an employee of Zynerba Pharmaceuticals, Inc. (the "Registrant") as an inducement material to his acceptance of employment with the Registrant (the "Inducement Award"). Pursuant to Rule 416 of the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional shares of Common Stock which become issuable under the Inducement Award by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the receipt of consideration which results in an increase in the number of the outstanding shares of the Registrant.

(2) This estimate is made pursuant to Rule 457(h) of the Securities Act. The price shown is based upon the exercise price of the Inducement Award.

## EXPLANATORY NOTE

To induce James Fickenscher to accept employment as the Chief Financial Officer of Zynerba Pharmaceuticals, Inc. (the "Registrant"), the Registrant granted Mr. Fickenscher a non-qualified stock option award to purchase 150,000 share of common stock, \$0.001 par value per share, of the Registrant (the "Common Stock") on September 13, 2016 (the "Inducement Award").

The Inducement Award was approved by the Registrant's Board of Directors in compliance with and in reliance on NASDAQ Listing Rule 5635(c)(4). The Inducement Award was granted outside of the Registrant's Amended and Restated 2014 Omnibus Incentive Compensation Plan, as amended. This Registration on Form S-8 registers shares of Common Stock issuable pursuant to the Inducement Award.

## PART I

### INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

#### Item 1. Plan Information.

The Registrant has sent or given or will send or give documents containing the information specified by Part I of this Registration Statement to Mr. Fickenscher, as specified in Rule 428(b)(1) promulgated by the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"). The Registrant is not filing such documents with the Commission, but these documents constitute (along with the documents incorporated by reference into this Registration Statement pursuant to Item 3 of Part II hereof) a prospectus that meets the requirements of Section 10(a) of the Securities Act.

#### Item 2. Registrant Information and Employee Plan Annual Information.

The Registrant will furnish without charge to Mr. Fickenscher, upon his written or oral request, a copy of any and all of the documents incorporated by reference, other than exhibits to such documents (unless such exhibits are specifically incorporated by reference to the information that is incorporated). Requests should be directed to Zynerba Pharmaceuticals, Inc., 80 W. Lancaster Avenue, Suite 300, Devon, PA 19333, Attention: Armando Anido, Chairman and Chief Executive Officer, telephone number (484) 581-7505.

## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 3. Incorporation of Documents by Reference.

The following documents of the Registrant filed with the Commission are incorporated by reference in this Registration Statement as of their respective dates:

- (a) The Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the Commission on March 27, 2017;
- (b) The Registrant's Current Reports on Form 8-K (other than portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits accompanying such reports that are related to such items) filed on January 6, 2017, January 19, 2017, February 6, 2017, February 9, 2017, March 13, 2017, March 27, 2017 and March 27, 2017; and
- (c) The description of the Registrant's Common Stock contained in the Form 8-A filed with the Commission on July 30, 2015 pursuant to the Securities Exchange Act of 1934, as amended (the "Exchange Act"), including any amendment or report filed for the purpose of further updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act prior to the filing of a post-effective amendment which indicates that all securities offered hereby

have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement and to be a part hereof from the date of filing of such documents; provided, however, that documents or information deemed to have been furnished and not filed in accordance with Commission rules shall not be deemed incorporated by reference into this Registration Statement. Any statement contained herein or in a document, all or a portion of which is incorporated or deemed to be incorporated by reference herein, shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or amended, to constitute a part of this Registration Statement.

**Item 4. Description of Securities.**

Not applicable.

**Item 5. Interests of Named Experts and Counsel.**

Not applicable.

**Item 6. Indemnification of Directors and Officers.**

The Registrant is incorporated under the laws of the State of Delaware. Section 145 of the Delaware General Corporation Law provides that a Delaware corporation may indemnify any persons who are, or are threatened to be made, parties to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was an officer, director, employee or agent of such corporation, or is or was serving at the request of such person as an officer, director, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was illegal. A Delaware corporation may indemnify any persons who are, or are threatened to be made, a party to any threatened, pending or completed action or suit by or in the right of the corporation by reason of the fact that such person is or was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him or her against the expenses which such officer or director has actually and reasonably incurred. The Registrant's sixth amended and restated certificate of incorporation and amended and restated bylaws provide for the indemnification of the Registrant's directors and officers to the fullest extent permitted under the Delaware General Corporation Law.

Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duties as a director, except for liability for any:

- transaction from which the director derives an improper personal benefit;
- act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or redemption of shares; or

- breach of a director's duty of loyalty to the corporation or its stockholders.

The Registrant's sixth amended and restated certificate of incorporation includes such a provision. Expenses incurred by any officer or director in defending any such action, suit or proceeding in advance of its final disposition shall be paid by the Registrant upon delivery to the Registrant of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified by the Registrant.

The Registrant has entered into indemnification agreements with each of the Registrant's directors and executive officers. These agreements require the Registrant to, among other things, indemnify each director and officer to the fullest extent permitted by law and advance expenses to each indemnitee in connection with any proceeding in which indemnification is available.

The Registrant has an insurance policy covering the Registrant's officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act, or otherwise.

**Item 7. Exemption from Registration Claimed.**

Not applicable.

**Item 8. Exhibits.**

Exhibit Number	Description
4.1	Sixth Amended and Restated Certificate of Incorporation of Zynerba Pharmaceuticals, Inc., effective August 10, 2015 (incorporated herein by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-37526) filed on August 10, 2015).
4.2	Amended and Restated By-laws of Zynerba Pharmaceuticals, Inc., effective August 10, 2015 (incorporated herein by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-37526) filed on August 10, 2015).
5.1	Opinion of Hogan Lovells US LLP (filed herewith).
10.1	Form of Award Agreement for Inducement Awards (incorporated herein by reference to Exhibit 10.17 to the Registrant's Annual Report on Form 10-K (File No. 001-37526) filed on March 27, 2017).
23.1	Consent of KPMG LLP (filed herewith).
23.2	Consent of Hogan Lovells US LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included in signature page to this Registration Statement).

**Item 9. Undertakings.**

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

*provided, however*, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Devon, Commonwealth of Pennsylvania, on this 27<sup>th</sup> day of March, 2017.

### ZYNERBA PHARMACEUTICALS, INC.

By: /s/ Armando Anido  
Name: Armando Anido  
Title: Chief Executive Officer and Chairman of the Board of Directors

### POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Armando Anido and James Fickenscher, as his or her true and lawful attorney-in-fact and agent, with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments), and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Armando Anido</u> Armando Anido	Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)	March 27, 2017
<u>/s/ James Fickenscher</u> James Fickenscher	Chief Financial Officer (Principal Financial and Accounting Officer)	March 27, 2017
<u>/s/ Terri B. Sebree</u> Terri B. Sebree	President	March 27, 2017
<u>/s/ Warren D. Cooper</u> Warren D. Cooper	Director	March 27, 2017
<u>/s/ William J. Federici</u> William J. Federici	Director	March 27, 2017
<u>/s/ Thomas L. Harrison</u> Thomas L. Harrison	Director	March 27, 2017

<u>/s/ Daniel L. Kisner</u> Daniel L. Kisner	Director	March 27, 2017
<u>/s/ Kenneth I. Moch</u> Kenneth I. Moch	Director	March 27, 2017
<u>/s/ Cynthia A. Rask</u> Cynthia A. Rask	Director	March 27, 2017

## EXHIBIT INDEX

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4.2	Amended and Restated By-laws of Zynerva Pharmaceuticals, Inc., effective August 10, 2015 (incorporated herein by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-37526) filed on August 10, 2015).
5.1	Opinion of Hogan Lovells US LLP (filed herewith).
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Hogan Lovells US LLP  
1835 Market Street, 29th Floor  
Philadelphia, PA 19103  
T +1 267 675 4600  
F +1 267 675 4601  
www.hoganlovells.com

March 27, 2017

Board of Directors  
Zynerba Pharmaceuticals, Inc.  
80 W. Lancaster Avenue, Suite 300  
Devon, PA 19333

Ladies and Gentlemen:

We are acting as counsel to Zynerba Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), in connection with its registration statement on Form S-8, as amended (the “**Registration Statement**”), filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the “**Act**”), relating to the proposed offering of up to 150,000 shares of common stock, par value \$0.001 per share, of the Company (the “**Shares**”), all of which shares are issuable pursuant to the Inducement Award Agreement, dated as of September 13, 2016, by and between the Company and James Fickenscher (the “**Plan**”). This opinion letter is furnished to you at your request to enable you to fulfill the requirements of Item 601(b)(5) of Regulation S-K, 17 C.F.R. § 229.601(b)(5), in connection with the Registration Statement.

For purposes of this opinion letter, we have examined copies of such agreements, instruments and documents as we have deemed an appropriate basis on which to render the opinions hereinafter expressed. In our examination of the aforesaid documents, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the accuracy and completeness of all documents submitted to us, the authenticity of all original documents, and the conformity to authentic original documents of all documents submitted to us as copies (including telecopies). As to all matters of fact, we have relied on the representations and statements of fact made in the documents so reviewed, and we have not independently established the facts so relied on. This opinion letter is given, and all statements herein are made, in the context of the foregoing.

This opinion letter is based as to matters of law solely on the Delaware General Corporation Law, as amended. We express no opinion herein as to any other statutes, rules or regulations.

Based upon, subject to and limited by the foregoing, we are of the opinion that following (i) effectiveness of the Registration Statement, (ii) issuance of the Shares pursuant to the terms of the Plan, and (iii) receipt by the Company of the consideration for the Shares specified in the resolutions of the Board of Directors or a duly authorized committee thereof, and the Plan, the Shares will be validly issued, fully paid, and nonassessable.

Hogan Lovells US LLP is a limited liability partnership registered in the District of Columbia. “Hogan Lovells” is an international legal practice that includes Hogan Lovells US LLP and Hogan Lovells International LLP, with offices in: Alicante Amsterdam Baltimore Beijing Berlin Brussels Caracas Colorado Springs Denver Dubai Dusseldorf Frankfurt Hamburg Hanoi Ho Chi Minh City Hong Kong Houston London Los Angeles Madrid Miami Milan Moscow Munich New York Northern Virginia Paris Philadelphia Prague Rome San Francisco Shanghai Silicon Valley Singapore Tokyo Ulaanbaatar Warsaw Washington DC Associated offices: Budapest Jakarta Jeddah Riyadh Zagreb. For more information see www.hoganlovells.com

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This opinion letter has been prepared for use in connection with the Registration Statement. We assume no obligation to advise you of any changes in the foregoing subsequent to the effective date of the Registration Statement.

We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Registration Statement. In giving this consent, we do not thereby admit that we are an “expert” within the meaning of the Act.

Very truly yours,

/s/ Hogan Lovells US LLP

HOGAN LOVELLS US LLP

**Consent of Independent Registered Public Accounting Firm**

The Board of Directors  
Zynerba Pharmaceuticals, Inc.:

We consent to the use of our report dated March 27, 2017, with respect to the consolidated balance sheets of Zynerba Pharmaceuticals, Inc. as of December 31, 2016 and 2015, and the related consolidated statements of operations, redeemable convertible preferred stock, convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2016, incorporated herein by reference.

/s/ KPMG LLP

Philadelphia, PA  
March 27, 2017

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