

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

ALCOBRA LTD.

(Exact name of registrant as specified in its charter)

State of Israel

(State or other jurisdiction of
incorporation or organization)

Not applicable

(I.R.S. Employer Identification No.)

Azrieli Triangle Building, 132 Derech Menachem Begin, 39th Floor, Tel Aviv 6701101 Israel
(Address of Principal Executive Offices)

Alcobra Ltd. 2010 Incentive Option Plan
(Full title of the plan)

Alcobra Inc.
600 West Germantown Pike, Suite 400, Plymouth Meeting, PA, 19462 Tel: (610)-940-1631
(Name, Address and Telephone Number of Agent for Service)

COPIES TO:

Howard E. Berkenblit, Esq.
Shy S. Baranov, Esq.
Zysman, Aharoni, Gayer and Sullivan & Worcester LLP
1633 Broadway
New York, NY 10019
(212)-660-3000

Eran Ben-Dor, Adv.
Zysman, Aharoni, Gayer & Co.
41-45 Rothschild Blvd.
Beit Zion
Tel Aviv 65784, Israel
Tel: +972-3-7955555

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth 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
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be registered (2)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Ordinary Shares (1)	50,000	\$5.53 (3)	\$ 276,500	\$32.05
Ordinary Shares (1)	1,359,232	\$1.19 (3)	\$1,617,486	\$187.47
Total	1,409,232	N/A	1,893,986	219.52

(1) Par value NIS 0.01 per share.

(2) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended, or the Securities Act, this Registration Statement also covers an indeterminate number of additional securities which may be offered and issued to prevent dilution resulting from stock splits, stock dividends, recapitalizations or similar transactions.

(3) Computed in accordance with Rule 457(h) promulgated under the Securities Act based on the exercise price of the options underlying the ordinary shares.

EXPLANATORY NOTE

We are filing this Registration Statement on Form S-8 in connection with 1,409,232 ordinary shares issuable to eligible directors, employees, office holders, service providers and consultants of Alcobra Ltd., or the Company or the Registrant, and its affiliates, under the Company's 2010 Incentive Option Plan, or the Plan, which are in addition to the 1,364,533 ordinary shares under the Plan registered on the Company's Form S-8 filed on March 28, 2014 (Commission File No. 333-194875), the 481,565 ordinary shares under the Plan registered on the Company's Form S-8 filed on February 27, 2015 (Commission File No. 333-202394) and the 959,571 ordinary shares under the Plan registered on the Company's Form S-8 filed on March 4, 2016 (Commission File No. 333-209947), or, collectively, the Prior Registration Statements. The aggregate number of ordinary shares the Company has registered under this Registration Statement on Form S-8 and the Prior Registration Statements is 4,214,901.

This Registration Statement relates to securities of the same class as those to which the Prior Registration Statements relate, and is submitted in accordance with General Instruction E to Form S-8 regarding Registration of Additional Securities. Pursuant to Instruction E of Form S-8, the contents of the Prior Registration Statements are incorporated herein by reference and made part of this Registration Statement, except as amended hereby.

Increases in the number of ordinary shares authorized for issuance under the Plan were approved by the board of directors of the Company on March 26, 2014, August 10, 2014, December 16, 2014, March 2, 2016 and March 13, 2017.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

All information required by Part I to be contained in the prospectus is omitted from this Registration Statement in accordance with Rule 428 and the introductory note to Part I of Form S-8, in each case under the Securities Act of 1933, as amended.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents filed with or furnished to the Securities and Exchange Commission, or the SEC, by the Registrant are incorporated herein by reference and made a part hereof:

- (1) The Registrant's Annual Report on Form 20-F for the fiscal year ended December 31, 2016, filed with the SEC on April 27, 2017;
 - (2) The description of the Registrant's ordinary shares, par value NIS 0.01 per share contained in the Registrant's registration statement on Form 8-A filed pursuant to the Securities the Exchange Act of 1934, as amended, or the Exchange Act, on May 17, 2013 (File No. 001-35932), including any amendment or report filed for the purpose of updating such description.
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In addition to the foregoing, all documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, and all reports on Form 6-K subsequently filed by the Registrant which state that they are incorporated by reference herein, prior to the filing of a post-effective amendment which indicates that all securities offered hereunder have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such documents and reports.

Any statement contained in a document 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 herein, or in any subsequently filed document which also is or is deemed to be incorporated by reference, modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

Item 8. Exhibits.

- 4.1(1) Articles of Association of the Registrant
- 5.1 Opinion of Zysman, Aharoni, Gayer & Co.
- 23.1 Consent of Kost Forer Gabbay & Kasierer, Certified Public Accountants (Israel) (a Member of Ernst & Young Global)
- 23.2 Consent of Zysman, Aharoni, Gayer & Co. (included in the opinion filed as Exhibit 5.1 to this Registration Statement)
- 24.1 Power of Attorney (included on signature page)
- 99.1(2) Alcobra Ltd. 2010 Incentive Option Plan, as amended

(1) Previously filed as Exhibit 3.2 to Form F-1/A filed with the SEC on March 19, 2013 (File No. 333-186003), and incorporated herein by reference.

(2) Previously filed as Exhibit 4.3 to Form 20-F filed with the SEC on April 28, 2017 (File No. 001-35932), and incorporated herein by reference.

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 on Form S-8 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Tel-Aviv, State of Israel, on April 28, 2017.

ALCOBRA LTD.

By: /s/ Dr. Yaron Daniely
Name: Dr. Yaron Daniely
Title: Chief Executive Officer and President

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Alcobra Ltd., hereby severally constitute and appoint Yaron Daniely and Tomer Berkovitz, and each of them individually, our true and lawful attorney to sign for us and in our names in the capacities indicated below any and all amendments or supplements, including any post-effective amendments, to this Registration Statement on Form S-8 and to file the same, with exhibits thereto and other documents in connection therewith, with the SEC, granting unto said attorney full power and authority to do and perform each and every act and thing requisite or 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 our signatures to said amendments to this Registration Statement signed by our said attorney and all else that said attorney may lawfully do and cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement on Form S-8 has been signed below by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Dr. Yaron Daniely</u> Dr. Yaron Daniely	Chief Executive Officer, President and Director (principal executive officer)	April 28, 2017
<u>/s/ Dr. Tomer Berkovitz</u> Dr. Tomer Berkovitz	Chief Operating Officer and Chief Financial Officer (principal financial officer and principal accounting officer)	April 28, 2017
<u>/s/ Howard B. Rosen</u> Howard B. Rosen	Chairman of the Board	April 28, 2017
<u>/s/ Arieh Ben Yosef</u> Arieh Ben Yosef	Director	April 27, 2017
<u>/s/ Daniel E. Geffken</u> Daniel E. Geffken	Director	April 27, 2017
_____ Dr. Aharon Schwartz	Director	
_____ Ofer Segev	Director	
<u>/s/ Dr. Joao Siffert</u> Dr. Joao Siffert	Director	April 27, 2017
<u>/s/ Orli Tori</u> Orli Tori	Director	April 27, 2017

SIGNATURE OF AUTHORIZED REPRESENTATIVE IN THE UNITED STATES

Pursuant to the Securities Act of 1933, as amended, the undersigned, the duly authorized representative in the United States of Alcobra Ltd., has signed this Registration Statement on Form S-8 on April 28, 2017.

ALCOBRA INC.

By: /s/ Dr. Yaron Daniely

Name: Dr. Yaron Daniely

Title: Chief Executive Officer and President

Zysman, Aharoni, Gayer & Co.

April 28, 2017

Alcobra Ltd.
Azrieli Triangle Building
132 Derech Menachem Begin, 39th Floor
Tel Aviv 6701101 Israel

Re: REGISTRATION STATEMENT ON FORM S-8

Ladies and Gentlemen:

We are acting as Israeli counsel for Alcobra Ltd., an Israeli company (the "Company"), in connection with the preparation of a Registration Statement on Form S-8 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Act"), pertaining to the registration of an additional 1,409,232 Ordinary Shares nominal value NIS 0.01 per share of the Company (the "Plan Shares") under the Alcobra Ltd. 2010 Incentive Option Plan (the "Plan").

In rendering our opinion, we have examined, and have relied as to factual matters solely upon, originals or copies certified, or otherwise identified to our satisfaction, of such documents, corporate records or other instruments as we have deemed necessary or appropriate for the purposes of this opinion. In our examination we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, and the conformity with the originals of all documents submitted to us as copies. We have, when relevant facts material to our opinion were not independently established by us, relied to the extent we deemed such reliance proper upon written or oral statements of officers and other representatives of the Company.

In giving the opinion expressed herein, no opinion is expressed as to the laws of any jurisdiction other than the State of Israel.

Based upon and subject to the foregoing, we are of the opinion that the Plan Shares, when issued pursuant to the terms of the Plan, and the terms of any agreements relating to such issuance, will be upon receipt of the consideration provided for in the Plan, validly issued, fully paid and nonassessable.

This opinion is intended solely for the benefit and use of the Company and other persons who are entitled to rely on the Registration Statement, and is not to be used, released, quoted, or relied upon by anyone else for any purpose (other than as required by law), without our prior written consent.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement, and to the use of our name wherever appearing in the Registration Statement in connection with Israeli law. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ ZYSMAN AHARONI GAYER & CO., LAW OFFICES

Zysman, Aharoni, Gayer & Co., Law Offices

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference, in the Registration Statement (Form S-8) pertaining to the Alcobra Ltd. 2010 Incentive Option Plan of our report dated April 27, 2017 with respect to the consolidated financial statements of Alcobra Ltd. and its subsidiary included in the Annual Report on Form 20-F of Alcobra Ltd. for the year ended December 31, 2016 filed with the Securities and Exchange Commission.

Tel-Aviv, Israel
April 27, 2017

/s/ Kost Forer Gabbay & Kasierer
KOST FORER GABBAY & KASIERER
A Member of EY Global
