

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

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

COMPUGEN LTD.

(Exact Name of Registrant as Specified in its charter)

Israel
(State or Other Jurisdiction of
Incorporation or Organization)

N/A
(I.R.S. Employer
Identification No.)

**Azrieli Center, 26 Harokmim Street, Building D
Holon, 5885849**

Israel
(Address, Including Zip Code, of Principal Executive Offices)

Compugen Ltd. 2010 Share Incentive Plan
(Full Title of the Plan)

Anat Cohen-Dayag, Ph.D.
President and Chief Executive Officer
Compugen Ltd.
Azrieli Center, 26 Harokmim Street, Building D
Holon, 5885849 Israel
Phone: +972-3-765-8585
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(Name, Address, including Zip Code, and Telephone Number, including Area Code, of Agent for Service)

Copies to:

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Holon, 5885849, Israel
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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company of an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐

Accelerated filer ☒

Non-accelerated filer ☐

Smaller reporting company ☐

Emerging growth company ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class Of Securities To Be Registered	Amount To Be Registered⁽¹⁾	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount Of Registration Fee
Ordinary Shares, nominal (par) value NIS 0.01 per share	1,700,000 ⁽²⁾	\$ 4.21 ⁽³⁾	\$ 7,157,000 ⁽³⁾	\$ 891.05

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the “Securities Act”), this registration statement shall also cover any additional ordinary shares that may become issuable by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without receipt of consideration that increases the number of outstanding ordinary shares of the registrant.
- (2) Represents an additional 1,700,000 ordinary shares issuable under the Compugen Ltd. 2010 Share Incentive Plan (the “2010 Plan”), over and above the number of ordinary shares issuable under the 2010 Plan that were previously registered under the Securities Act.
- (3) Pursuant to Rule 457(h)(1) under the Securities Act, the proposed maximum offering price per security and the proposed maximum aggregate offering price are based on the average of the high and low sale prices per share of the registrant’s ordinary shares as reported by The Nasdaq Global Market on March 21, 2018.

EXPLANATORY NOTE

This Registration Statement relates to an increase of an additional 1,700,000 ordinary shares, nominal (par) value NIS 0.01 per share, of Compugen Ltd. (the “Registrant”) that are being issued and sold, or may be issued and sold, upon exercise of options or other awards granted by the Registrant to participants in the 2010 Plan, as approved by the Board of Directors on August 30, 2017.

Reference is made to the Registrant’s Registration Statements on Form S-8 filed with the Securities and Exchange Commission (the “Commission”) on September 7, 2010 (Registration No. 333-169239) and June 11, 2015 (Registration No. 333-204869) (together, the “Prior Registration Statements”), pursuant to which a total of 11,645,436 ordinary shares issuable under the 2010 Plan were registered under the Securities Act. Pursuant to General Instruction E to Form S-8, the contents of the Prior Registration Statements are hereby incorporated by reference in their entirety, except as otherwise updated or modified by this Registration Statement.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The following documents filed by the Registrant with the Commission pursuant to the Securities Exchange Act of 1934, as amended (the “Exchange Act”) are hereby incorporated herein by reference and made a part hereof:

- (i) The Registrant’s Annual Report on Form 20-F for the fiscal year ended December 31, 2017, filed with the Commission on March 27, 2018 (File No. 000-30902);
- (ii) The Registrant’s Reports of Foreign Private Issuer on Form 6-K, as filed with the Commission on January 31, 2018, February 6, 2018, February 21, 2018 and March 14, 2018 (File No. 000-30902); and
- (iii) The description of the Registrant’s Ordinary Shares in the Registrant’s Registration Statement on Form 8-A (File No. 000-30902) filed with the Commission under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), on August 2, 2000, including any amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the Registrant with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, after the date of this Registration Statement and prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, and all Reports of Foreign Private Issuer on Form 6-K submitted by the Registrant to the Commission during such period, or portions thereof that are identified in such forms as being incorporated into this Registration Statement, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing such documents. Any document, or 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 document or statement contained herein, or in any other subsequently filed document that also is deemed to be incorporated by reference herein, modifies or supersedes such document or 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. Subject to the foregoing, all information appearing in this Registration Statement is qualified in its entirety by the information appearing in the documents incorporated by reference.

ITEM 8. EXHIBITS.

The following is a list of exhibits filed as a part of this Registration Statement which are incorporated herein:

EXHIBIT NO.	EXHIBIT
5.1	Opinion of Shibolet & Co., Law Offices
23.1	Consent of Kost Forer Gabbay & Kasierer, a Member of Ernst & Young Global
23.2	Consent of Shibolet & Co., Law Offices (included in Exhibit 5.1)
24.1	Powers of Attorney (included in the signature pages to this Registration Statement)

SIGNATURES

The Registrant. 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 City of Holon, State of Israel, on March 27, 2018.

Compugen Ltd.

By: /s/ Anat Cohen-Dayag, Ph.D.

Anat Cohen-Dayag, Ph.D.

Chief Executive Officer and President

Each person whose signature appears below constitutes and appoints Anat Cohen-Dayag, Ph.D., Ari Krashin and Donna Gershowitz, and each of them singly, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them singly, for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement of Compugen Ltd. and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting to the attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in or about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that the attorneys-in-fact and agents or any or each of them or their substitute may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title(s)</u>	<u>Date</u>
<u>/s/ Anat Cohen-Dayag, Ph.D.</u> Anat Cohen-Dayag, Ph.D.	Chief Executive Officer and President and Director (principal executive officer)	March 27, 2018
<u>/s/ Ari Krashin</u> Ari Krashin	Chief Financial Officer (principal financial and accounting officer)	March 27, 2018
<u>/s/Paul Sekhri</u> Paul Sekhri	Chairman of the Board	March 27, 2018
<u>/s/ Prof. Yair Aharonowitz</u> Prof. Yair Aharonowitz	Director	March 27, 2018
<u>/s/ Prof. Ruth Arnon</u> Prof. Ruth Arnon	Director	March 27, 2018
<u>/s/ Dov Hershberg</u> Dov Hershberg	Director	March 27, 2018
<u>/s/ Arie Ovadia, Ph.D.</u> Arie Ovadia, Ph.D.	Director	March 27, 2018
<u>/s/ Dr. Michal Preminger</u> Dr. Michal Preminger	Director	March 27, 2018

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Tel Aviv, March 25, 2018

Compugen Ltd.
26 Harokmim St.,
Holon, 5885849
Israel

Ladies and Gentlemen:

We refer to the registration statement on Form S-8 (the "**Registration Statement**"), to be filed by Compugen Ltd., a Company organized under the laws of the state of Israeli (the "**Company**"), with the United States Securities and Exchange Commission under the Securities Act of 1933, as amended (the "**Act**"), relating to the registration of 1,700,000 Ordinary Shares, nominal value NIS 0.01 each (the "**Shares**"), authorized for issuance pursuant to the Compugen Ltd. 2010 Share Incentive Plan (the "**Plan**").

This opinion is being furnished in accordance with the requirements of Item 8 of Form S-8 and Item 601(b)(5)(i) of Regulation S-K.

In our capacity as the Company's Israeli counsel in connection with the registering of the Shares pursuant to the Registration Statement, we have examined copies of the Company's Articles of Association, as amended, the Plan, protocols of meetings of the board of directors of the Company and its shareholders with respect to the Plan and other corporate records, instruments and documents we have considered necessary or appropriate for the purpose of this opinion, which were presented to us by the Company, and such matters of Israeli law we have considered necessary or appropriate for the purpose of rendering this opinion. We have assumed that the Company presented to us all such protocols and documents relating to or having any bearing on the Plan.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the correctness and completeness of certificates of public officials and the representations set forth therein, the authenticity of all documents submitted to us as originals and the conformity to authentic original documents of all documents submitted to us as copies. We have assumed the same to have been properly given and to be accurate, we have assumed the truth of all facts communicated to us by the Company, and we have assumed that all protocols of meetings of the Company's board of directors and shareholders which have been provided to us are true and accurate and have been properly prepared in accordance with the Company's incorporation documents and all applicable laws.

Based upon and subject to the foregoing, we are of the opinion that the Shares being registered pursuant to this Registration Statement have been duly and validly authorized for issuance, and if, and when, issued pursuant to the terms and conditions of the Plan, such Shares will be validly issued, fully paid and nonassessable.

We are members of the Israeli Bar and we are opining herein as to the effect on the subject matter only of the internal laws of the State of Israel, and we express no opinion with respect to the applicability thereto, or the effect thereon, of the laws of any other jurisdiction.

This opinion letter is rendered as of the date hereof and we disclaim any obligation to advise you of facts, circumstances, events or developments, including, without limitation, in the law, which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein. Our opinion is expressly limited to the matters set forth above and we render no opinion, whether by implication or otherwise, as to any other matters relating to the Company, the Plan or the Shares.

We consent to the filing of this opinion as an exhibit to the Registration Statement. This consent is not to be construed as an admission that we are a party whose consent is required to be filed with the Registration Statement under Section 7 of the Act or the rules and regulations promulgated thereunder.

Very truly yours,

/s/ Shibolet & Co.

Advocates & Notary

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 of Compugen Ltd. pertaining to the Compugen Ltd. 2010 Share Incentive Plan, of our reports dated March 27, 2018, with respect to the consolidated financial statements of Compugen Ltd., and the effectiveness of internal control over financial reporting of Compugen Ltd. included in its Annual Report on Form 20-F for the year ended December 31, 2017, filed with the Securities and Exchange Commission.

Tel Aviv, Israel
March 27, 2018

/s/ KOST FORER GABBAY & KASIERER
KOST FORER GABBAY & KASIERER
A Member of Ernst & Young Global
