

As filed with the Securities and Exchange Commission on August 11, 2009

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM F-3
REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933

Compugen Ltd.
(Exact name of registrant as specified in its charter)

Israel **Not Applicable**
(State or other jurisdiction of
incorporation or organization) (I.R.S. Employer Identification No.)

**72 Pinchas Rosen Street
Tel Aviv, 69512 Israel
972-3-765-8585**

(Address and telephone number of registrant's principal executive offices)

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Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.C. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.C. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Proposed maximum aggregate offering price (1)	Amount of registration fee (2)
Ordinary shares, par value NIS 0.01 per share	\$20,000,000	\$1,116

(1) This Registration Statement registers an indeterminate number of ordinary shares that the Registrant may sell from time to time. The aggregate offering price for all the ordinary shares that the Registrant may sell from time to time pursuant to this Registration Statement will not exceed \$20,000,000.

(2) The registration fee has been calculated pursuant to Rule 457(o) under the Securities Act of 1933, as amended, on the basis of the maximum aggregate offering price of the securities listed.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell securities and it is not soliciting an offer to buy securities in any state where the offer or sale is not permitted.

Subject to Completion, Dated August 11, 2009

Prospectus



We may offer and sell from time to time in one or more offerings our ordinary shares having an aggregate offering price up to \$20,000,000.

Each time we sell ordinary shares pursuant to this prospectus, we will provide in a supplement to this prospectus the price and any other material terms of any such offering. Any prospectus supplement may also add, update or change information contained in the prospectus. You should read this prospectus and any applicable prospectus supplement, as well as the documents incorporated by reference or deemed incorporated by reference into this prospectus, carefully before you invest in any securities. **This prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement.**

Our ordinary shares are traded on the Nasdaq Capital Market under the symbol "CGEN".

Based on the closing sale price of our ordinary shares on the Nasdaq Capital Market on August 10, 2009, which was \$2.53, the aggregate worldwide market value of our outstanding ordinary shares held by non-affiliates as of such date was \$54,824,631. There were 28,551,390 ordinary shares outstanding as of such date, of which 21,669,815 shares were held by non-affiliates. As of the date hereof, we have not offered any securities pursuant to the registration statement of which this prospectus forms a part or any similar registration statement during the prior 12 calendar month period that ends on and includes the date hereof.

Investing in our ordinary shares involves a high degree of risk. Risks associated with an investment in our ordinary shares will be described in the applicable prospectus supplement and are and will be described in certain of our filings with the Securities and Exchange Commission, as described in "Risk Factors" on page 3.

The ordinary shares may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers, or through a combination of such methods. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution." If any underwriters are involved in the sale of our ordinary shares with respect to which this prospectus is being delivered, the names of such underwriters and any applicable commissions or discounts will be set forth in a prospectus supplement. The net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

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

The date of this prospectus is , 2009

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the Commission, utilizing a “shelf” registration process. Under this shelf registration process, we may offer from time to time up to \$20,000,000 in the aggregate of our ordinary shares in one or more offerings. We sometimes refer to our ordinary shares as the “securities” throughout this prospectus.

Each time we sell ordinary shares, we will provide you with a prospectus supplement that will describe the specific amounts, prices and terms of such offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read carefully both this prospectus and any prospectus supplement together with additional information described below under “Where You Can Find More Information and Incorporation by Reference.”

This prospectus does not contain all of the information provided in the registration statement that we filed with the Commission. For further information about us or our ordinary shares, you should refer to that registration statement, which you can obtain from the Commission as described below under “Where You Can Find More Information and Incorporation by Reference.”

You should rely only on the information contained or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained in this prospectus and the accompanying prospectus supplement is accurate on any date subsequent to the date set forth on the front of the document or that any information that we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since those dates.

ABOUT COMPUGEN LTD.

Compugen is a drug and diagnostic product candidate discovery company that relies on unique computer-based discovery platforms to predict and select novel product candidates in a growing number of therapeutic areas. The computationally-discovered product candidates are validated utilizing traditional *in vitro* and *in vivo* experimental procedures. Our ten initial computer-based discovery platforms are focused mainly on cancer, cardiovascular and immune-related diseases. Compugen’s discovery efforts are pursued either (i) by us independently and/or (ii) under various forms of collaborations with partner companies whereby our discovery platforms or other discovery capabilities are targeted to areas of interest of such partner companies. Our business model provides that development and commercialization of product candidates will be primarily accomplished through various forms of licensing or other arrangements with leading pharmaceutical and diagnostic companies, whereby Compugen receives milestone payments and revenue-sharing amounts for all products based on our candidate molecules.

Research and Discovery Activities: Our research and discovery activities consist of three primary and overlapping components. The first is our continuing effort to obtain deeper predictive understandings of important biological phenomena at the molecular level through the analysis of biological data of various types such as DNA or RNA sequences, gene expression data, protein network data, data related to drugs in development and drugs already being commercialized. The second utilizes these understandings, along with field-specific information, to develop a growing number of field-

focused, computer-based discovery platforms. The third component is the utilization of these discovery platforms, on our own or with partners, to discover novel molecules of interest. All three components require the use of our extensive base of proprietary algorithms and other computational biology systems and tools.

Therapeutic and Diagnostic Applications: In each field, we independently, or with a partner company, seek to discover novel candidates that answer unmet medical needs and that may be suitable for further development as therapeutic or diagnostic products. Although each of our platforms is field-specific, our underlying capabilities and general approach are not, and can be utilized for numerous applications, both therapeutic and/or diagnostic. Our therapeutic candidates include novel peptides or proteins that are themselves drug candidates, targets for potential drugs (such as specific membrane proteins of cancer cells for antibody therapy) or known small molecules with new indications. Our diagnostic biomarkers indicate, among others, the presence or absence of a condition, such as a disease, or a person's predisposition to either acquire a disease or to respond to a therapeutic treatment.

Business Model: Our business model is based on Compugen both utilizing and continuing to expand its proprietary predictive discovery capabilities in the form of underlying scientific knowledge at the molecular level, algorithms and other computational biology systems and infrastructure, and product candidate discovery platforms. The utilization of these capabilities is targeted primarily at various forms of collaborations with leading diagnostic, biotechnology and pharmaceutical companies, both for product candidate discovery purposes and further development and commercialization of product candidates. In all cases, the objective is that the collaborations be "product oriented", with Compugen having the right to receive milestone payments and revenue-sharing amounts from all products developed through such collaborations. Utilizing Compugen's growing inventory of field-focused discovery platforms, such collaborations can be based not only on product candidates previously discovered by us, but also on product candidate "discovery on demand" in areas of interest to our partner, or combinations of the two. We have entered into several such agreements, but we have not yet recognized significant revenues from these initial agreements.

Our principal executive offices are located at 72 Pinchas Rosen Street, Tel Aviv, Israel 69512. Our telephone number is +972-3-765-8585 and our website address is <http://www.cgen.com>. The information on our website is not incorporated by reference into this prospectus and should not be relied upon with respect to this offering.

MATERIAL CHANGES

On May 28, 2009, we received a letter from Nasdaq stating that we were not in compliance with the Nasdaq Global Market minimum stockholders' equity continued listing requirement of \$10 million. As of March 31, 2009, our stockholders' equity (based on our book value) was approximately \$8.9 million. On June 17, 2009, we announced that we had applied to transfer to the Nasdaq Capital Market, or the Capital Market, a continuous trading market that operates in the same manner as the Nasdaq Global Market, and that our application to transfer the listing of our ordinary shares from the Nasdaq Global Market to the Capital Market was approved by Nasdaq. The transfer became effective as of the opening of business on Wednesday, June 17, 2009; our ordinary shares continue to trade under the symbol "CGEN."

On June 2, 2009, we announced the appointment of Anat Cohen-Dayag, Ph.D. to act together with Martin Gerstel as our co-Chief Executive Officers. Dr. Cohen-Dayag joined our company in 2002 and has held the positions of director of diagnostics, vice president for diagnostic biomarkers & drug targets, and most recently, vice president of R&D. Mr. Gerstel joined our company in 1997 as chairman of the board and served in that role until January of this year when he was appointed Chief Executive

Officer. Ms. Cohen-Dayag was also subsequently provided the title of President by our board of directors such that she now serves as our President and Chief Executive Officer.

On June 30, 2009, we announced that we received approximately \$3.6 million from the private sale of 1,000,000 shares of Evogene Ltd. held by us to a single purchaser. The funds generated from this transaction are expected to be used by us for general corporate purposes through mid 2010. After this sale, we continue to hold 1,150,000 shares of Evogene. Evogene was established as an independent company in 2002 to utilize certain of our *in-silico* predictive discovery capabilities in the agricultural field. The ordinary shares of Evogene held by us are listed for trading on the Tel Aviv Stock Exchange (TASE:EVGN).

RISK FACTORS

Before making an investment decision, you should carefully consider the risks described under “Risk Factors” in the applicable prospectus supplement and in our most recent Annual Report on Form 20-F, or any updates in our Reports on Form 6-K, together with all of the other information appearing in this prospectus or incorporated by reference into this prospectus and any applicable prospectus supplement, in light of your particular investment objectives and financial circumstances. The risks so described are not the only risks facing our company. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations. Our business, financial condition and results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains, and any accompanying prospectus supplement will contain, forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the Private Securities Litigation Reform Act of 1995. Also, documents that we incorporate by reference into this prospectus, including documents that we subsequently file with the Commission, will contain forward-looking statements. Forward-looking statements are those that predict or describe future events or trends and that do not relate solely to historical matters. You can generally identify forward-looking statements as statements containing the words “may,” “will,” “could,” “should,” “expect,” “anticipate,” “intend,” “estimate,” “believe,” “project,” “plan,” “assume” or other similar expressions, or negatives of those expressions, although not all forward-looking statements contain these identifying words. All statements contained or incorporated by reference in this prospectus and any prospectus supplement regarding our future strategy, future operations, projected financial position, proposed products, estimated future revenues, projected costs, future prospects, the future of our industry and results that might be obtained by pursuing management’s current plans and objectives are forward-looking statements.

You should not place undue reliance on our forward-looking statements because the matters they describe are subject to certain risks, uncertainties and assumptions that are difficult to predict. Our forward-looking statements are based on the information currently available to us and speak only as of the date on the cover of this prospectus, the date of any prospectus supplement, or, in the case of forward-looking statements incorporated by reference, the date of the filing that includes the statement. Over time, our actual results, performance or achievements may differ from those expressed or implied by our forward-looking statements, and such difference might be significant and materially adverse to our security holders. We undertake no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

We have identified some of the important factors that could cause future events to differ from our current expectations and they are described in this prospectus and supplements to this prospectus under the caption “Risk Factors,” as well as in our most recent Annual Report on Form 20-F, including without limitation under the captions “Risk Factors” and “Operating and Financial Review and Prospects,” and in other documents that we may file with the Commission, all of which you should review carefully. Please consider our forward-looking statements in light of those risks as you read this prospectus and any prospectus supplement.

OFFER STATISTICS AND EXPECTED TIMETABLE

We may sell from time to time pursuant to this prospectus (as may be detailed in prospectus supplements) an indeterminate number of securities as shall have a maximum aggregate offering price of

\$20,000,000. The actual per share price of the securities that we will offer pursuant hereto will depend on a number of factors that may be relevant as of the time of offer (see "Plan of Distribution" below).

PRICE RANGE OF OUR SHARES

The following table lists the high and low reported sales price for our ordinary shares, for the periods indicated, on Nasdaq. Our ordinary shares were listed on the Nasdaq Global Market through June 16, 2009. Since June 17, 2009, our ordinary shares have been listed on the Nasdaq Capital Market.

<u>Calendar Period</u>	<u>Price Per Share</u>	
	<u>High</u>	<u>Low</u>
Annual		
2004	8.09	3.18
2005	6.54	2.46
2006	5.22	2.10
2007	3.40	1.56
2008	2.80	0.34
Fiscal Quarters		
2007		
First Quarter	3.40	2.37
Second Quarter	3.18	2.58
Third Quarter	3.16	2.29
Fourth Quarter	2.50	1.56
2008		
First Quarter	2.80	1.60
Second Quarter	2.59	1.96
Third Quarter	2.70	0.87
Fourth Quarter	1.82	0.34
2009		
First Quarter	1.00	0.39
Second Quarter	2.25	0.63
Third Quarter (through July 31, 2009)	2.80	1.73
Most Recent Six Months		
February 2009	0.65	0.41
March 2009	0.80	0.39
April 2009	1.35	0.63
May 2009	1.27	0.89
June 2009	2.25	1.05
July 2009	2.80	1.73

On August 10, 2009, the closing price of our ordinary shares on the Capital Market was \$2.53

The following table lists the high and low reported sales price for our ordinary shares, for the periods indicated, on the Tel-Aviv Stock Exchange:

<u>Calendar Period</u>	<u>Price Per Share</u>	
	<u>In US\$*</u>	
	<u>High</u>	<u>Low</u>
Annual		
2004	8.13	3.04
2005	6.56	2.58
2006	5.30	2.38
2007	3.53	1.64
2008	2.81	0.42
Fiscal Quarters		
2007		
First Quarter	3.53	2.42
Second Quarter	3.06	2.57
Third Quarter	3.01	2.41
Fourth Quarter	2.55	1.64
2008		
First Quarter	2.81	1.61
Second Quarter	2.51	1.90
Third Quarter	2.51	1.70
Fourth Quarter	1.77	0.42
2009		
First Quarter	0.79	0.42
Second Quarter	2.17	0.64
Third Quarter (through July 31, 2009)	2.39	1.67
Most Recent Six Months		
February 2009	0.73	0.48
March 2009	0.70	0.42
April 2009	1.20	0.64
May 2009	1.21	0.89
June 2009	2.17	1.09
July 2009	2.39	1.67

On August 10, 2009, the closing price of our ordinary shares on the Tel-Aviv Stock Exchange was *\$2.52.

* The currency in which our stock is traded on the Tel Aviv Stock Exchange is the New Israeli Shekel. The above dollar amounts represent a conversion from New Israeli Shekels to dollar amounts in accordance with the dollar - New Israeli Shekel conversion rate as of the relevant date of trade.

REASONS FOR THE OFFER AND USE OF PROCEEDS

Our management will have broad discretion over the use of the net proceeds from the sale of our securities pursuant to this prospectus. Unless otherwise indicated in any accompanying prospectus supplement, we currently intend to use the net proceeds from the sale of the securities offered pursuant to this prospectus for general corporate purposes and working capital requirements. Pending use of the proceeds, we intend to invest the proceeds in short-term money market funds with portfolios of investment grade corporate and government securities.

PLAN OF DISTRIBUTION

Securities and Exchange Commission rules limit the usage of the registration statement of which this prospectus forms a part. Assuming that the aggregate worldwide market value of our common equity held by non-affiliates remains below \$75 million, we may only sell, pursuant hereto, such number of securities, which constitutes, together with all other securities sold pursuant to the registration statement of which this prospectus forms a part, or any similar primary offering under a registration statement on Form F-3, during the period of 12 calendar months immediately prior to, and including, such sale, no more than one-third (1/3) of the worldwide aggregate market value of our common equity held by non-affiliates. Based on the closing sale price of our ordinary shares on the Nasdaq Capital Market on August 10, 2009, which was \$2.53 and a total of 21,669,815 outstanding ordinary shares held by non-affiliates as of such date, the aggregate worldwide market value of our outstanding ordinary shares held by non-affiliates as of such date was \$54,824,631. As of the date hereof, we have not offered any securities pursuant to the registration statement of which this prospectus forms a part or any similar registration statement during the prior 12 calendar month period that ends on and includes the date hereof.

We may sell the offered securities on a negotiated or competitive bid basis to or through underwriters or dealers. We may also sell the securities directly to institutional investors or other purchasers or through agents. We will identify any underwriter, dealer, or agent involved in the offer and sale of the securities, and any applicable commissions, discounts and other terms constituting compensation to such underwriters, dealers or agents, in a prospectus supplement.

We may distribute our securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Only underwriters named in the prospectus supplement are underwriters of our securities offered by the prospectus supplement.

If underwriters are used in the sale of our securities, such securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Unless stated otherwise in a prospectus supplement, the obligation of any underwriters to purchase our securities will be subject to certain conditions and the underwriters will be obligated to purchase all of the applicable securities if any are purchased. If a dealer is used in a sale, we may sell our securities to the dealer as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. In effecting sales, dealers engaged by us may arrange for other dealers to participate in the resales.

We or our agents may solicit offers to purchase securities from time to time. Unless stated otherwise in a prospectus supplement, any agent will be acting on a best efforts basis for the period of its appointment. In addition, we may enter into derivative, sale or forward sale transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with such transaction, the third parties may, pursuant to this prospectus and the applicable prospectus supplement, sell securities covered by this prospectus and the applicable prospectus supplement. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us or others to close out any

related short positions. We may also loan or pledge securities covered by this prospectus and the applicable prospectus supplement to third parties, who may sell the loaned securities or, in the event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement. The third party in such transactions will be an underwriter and will be identified in the applicable prospectus supplement or in a post-effective amendment.

In connection with the sale of our securities, underwriters or agents may receive compensation (in the form of discounts, concessions or commissions) from us or from purchasers of securities for whom they may act as agents. Underwriters may sell securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of our securities may be deemed to be "underwriters" as that term is defined in the Securities Act of 1933, or the Securities Act, and any discounts or commissions received by them from us and any profits on the resale of the shares by them may be deemed to be underwriting discounts and commissions under the Securities Act. Compensation as to a particular underwriter, dealer or agent might be in excess of customary commissions and will be in amounts to be negotiated in connection with transaction involving our securities. We will identify any such underwriter or agent, and we will describe any such compensation paid, in the related prospectus supplement. Maximum compensation to any underwriters, dealers or agents will not exceed any applicable FINRA limitations.

Underwriters, dealers and agents may be entitled, under agreements with us, to indemnification against and contribution toward certain civil liabilities, including liabilities under the Securities Act.

If stated in a prospectus supplement, we will authorize agents and underwriters to solicit offers by certain specified institutions or other persons to purchase our securities at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specific date in the future. Institutions with whom such contracts may be made include commercial savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions, and other institutions, but shall in all cases be subject to our approval. Such contracts will be subject only to those conditions set forth in the prospectus supplement, and the prospectus supplement will set forth the commission payable for solicitation of such contracts. The obligations of any purchase under any such contract will be subject to the condition that the purchase of the securities shall not be prohibited at the time of delivery under the laws of the jurisdiction to which the purchaser is subject. The underwriters and other agents will not have any responsibility in respect of the validity or performance of such contracts.

If underwriters or dealers are used in the sale, until the distribution of our securities is completed, Commission rules may limit the ability of any such underwriters and selling group members to bid for and purchase the securities. As an exception to these rules, representatives of any underwriters are permitted to engage in certain transactions that stabilize the price of the securities. Such transactions may consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities. If the underwriters create a short position in the securities in connection with the offering (in other words, if they sell more shares than are set forth on the cover page of the prospectus supplement), the representatives of the underwriters may reduce that short position by purchasing securities in the open market. The representatives of the underwriters also may elect to reduce any short position by exercising all or part of any over-allotment option we may grant to the underwriters, as described in the prospectus supplement. In addition, the representatives of the underwriters may impose a penalty bid on certain underwriters and selling group members. This means that if the representatives purchase securities in the open market to reduce the underwriters' short position or to stabilize the price of our securities, they may reclaim the amount of the selling concession from the underwriters and selling group members who sold those securities as part of the offering. In general, purchases of a security for the purpose of stabilizing or

to reduce a short position could cause the price of the security to be higher than it might be in the absence of such purchases. The imposition of a penalty bid might also have the effect of causing the price of the securities to be higher than it would otherwise be. If commenced, the representatives of the underwriters may discontinue any of the transactions at any time. These transactions may be effected on any exchange on which our securities are traded, in the over-the-counter market, or otherwise.

Certain of the underwriters or agents and their associates may engage in transactions with and perform services for us or our affiliates in the ordinary course of their respective businesses.

EXPENSES

We are paying all of the expenses of the registration of our securities under the Securities Act and compliance with blue-sky laws, including registration and filing fees, printing and duplication expenses, administrative expenses, accounting fees and the legal fees of our counsel. We estimate these expenses to be approximately \$33,116 which at the present time include the following categories of expenses:

SEC registration fee	\$ 1,116
Legal fees and expenses	\$ 25,000
Accounting fees and expenses	\$ 6,000
Miscellaneous expenses	\$ 1,000
Total	<u>\$ 33,116</u>

In addition, we anticipate incurring additional expenses in the future in connection with the offering of our securities pursuant to this prospectus. Any such additional expenses will be disclosed in a prospectus supplement.

LEGAL MATTERS

The validity of the ordinary shares being offered hereby will be passed upon for us by Meitar Liquornik Geva & Leshem Brandwein, Ramat-Gan, Israel. Kramer Levin Naftalis & Frankel LLP, New York, New York, is acting as our counsel in connection with United States securities laws.

EXPERTS

Our consolidated financial statements appearing in our Annual Report on Form 20-F for the year ended December 31, 2008 have been audited by Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global independent registered public accounting firm, as set forth in their reports thereon included therein, and incorporated herein by reference. The financial statements for the years ended December 31, 2007 and 2006 of our wholly-owned subsidiary, Keddem Bioscience Ltd., not separately presented in our Annual Report, were audited by Kesselman & Kesselman (C.P.A Isr.), a member firm of PricewaterhouseCoopers International Limited, whose reports have also been incorporated in this prospectus by reference to our Annual Report on Form 20-F for the year ended December 31, 2008. The financial statements referred to above are included in reliance upon such reports given on the authority of such firms as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION AND INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are an Israeli company and are a “foreign private issuer” as defined in Rule 3b-4 under the Exchange Act. As a result, (1) our proxy solicitations are not subject to the disclosure and procedural requirements of Regulation 14A under the Exchange Act, (2) transactions in our equity securities by our officers and directors are exempt from Section 16 of the Exchange Act, and (3) until November 4, 2002, we were not required to make our SEC filings electronically, so that many of those filings are not available on the Commission’s website. However, since that date, we have been making all required filings with the Commission electronically, and these filings are available over the Internet as described below.

In addition, we are not required to file reports and financial statements with the Commission as frequently or as promptly as U.S. companies whose securities are registered under the Exchange Act. However, we file with the Commission an Annual Report on Form 20-F containing financial statements audited by an independent registered public accounting firm. We also furnish reports on Form 6-K containing unaudited financial information for the first three quarters of each fiscal year and other material information that we are required to make public in Israel, that we file with, and that is made public by, any stock exchange on which our shares are traded, or that we distribute, or that is required to be distributed by us, to our shareholders.

You can read and copy any materials we file with the Commission at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You can obtain information about the operation of the Commission Public Reference Room by calling the Commission at 1-800-SEC-0330. The Commission also maintains a web site that contains information we file electronically with the Commission, which you can access over the Internet at <http://www.sec.gov>. You may also access the information we file electronically with the Commission through our website at <http://www.cgen.com>. The information contained on, or linked from our website does not form part of this prospectus.

This prospectus is part of a registration statement on Form F-3 filed by us with the Commission under the Securities Act. As permitted by the rules and regulations of the Commission, this prospectus does not contain all the information set forth in the registration statement and the exhibits thereto filed with the Commission. For further information with respect to us and the ordinary shares offered hereby, you should refer to the complete registration statement on Form F-3, which may be obtained from the locations described above. Statements contained in this prospectus or in any prospectus supplement about the contents of any contract or other document are not necessarily complete. If we have filed any contract

or other document as an exhibit to the registration statement or any other document incorporated by reference in the registration statement, you should read the exhibit for a more complete understanding of the document or matter involved. Each statement regarding a contract or other document is qualified in its entirety by reference to the actual document.

We incorporate by reference in this prospectus the documents listed below, and any future Annual Reports on Form 20-F or Reports on Form 6-K (to that extent that such Form 6-K indicates that it is intended to be incorporated by reference herein) filed with the Commission pursuant to the Exchange Act prior to the termination of the offering. The documents we incorporate by reference are:

- our Annual Report on Form 20-F for the fiscal year ended December 31, 2008;
- our Reports on Form 6-K filed with the Commission on each of June 2, 2009, June 17, 2009, and June 30, 2009, and
- the description of our ordinary shares set forth in our Report on Form 6-K filed with the Commission on August 11, 2009.

The information we incorporate by reference is an important part of this prospectus, and later information that we file with the Commission will automatically update and supersede the information contained in this prospectus.

We shall provide you without charge, upon your written or oral request, a copy of any of the documents incorporated by reference in this prospectus, other than exhibits to such documents which are not specifically incorporated by reference into such documents. Please direct your written or telephone requests to us at CompuGen Ltd., 72 Pinchas Rosen Street, Tel Aviv, Israel 69512; +972-765-8585, Attention: Dikla Czaczkes Axselbrad, Chief Financial Officer.

ENFORCEABILITY OF CIVIL LIABILITIES

Service of process upon us and upon our directors and officers and the experts named in his prospectus, most of whom reside outside the United States, may be difficult to obtain within the United States. Furthermore, because substantially all of our assets and substantially all of our directors and officers are located outside the United States, any judgment obtained in the United States against us or any of our directors and officers may not be collectible within the United States.

There is doubt as to the enforceability of civil liabilities under the Securities Act and the Exchange Act in original actions instituted in Israel. However, subject to specified time limitations, an Israeli court may declare a foreign civil judgment enforceable if it finds that:

- the judgment was rendered by a court which was, according to the laws of the state of the court, competent to render the judgment,
- the judgment is no longer appealable,
- the obligation imposed by the judgment is enforceable according to the rules relating to the enforceability of judgments in Israel and the substance of the judgment is not contrary to public policy, and
- the judgment is executory in the state in which it was given.

Even if the above conditions are satisfied, an Israeli court will not enforce a foreign judgment if it was given in a state whose laws do not provide for the enforcement of judgments of Israeli courts (subject to exceptional cases) or if its enforcement is likely to prejudice the sovereignty or security of the State of Israel.

An Israeli court also will not declare a foreign judgment enforceable if:

- the judgment was obtained by fraud.
- there was no due process,
- the judgment was rendered by a court not competent to render it according to the laws of private international law in Israel,
- the judgment is at variance with another judgment that was given in the same matter between the same parties and which is still valid, or
- at the time the action was brought in the foreign court a suit in the same matter and between the same parties was pending before a court or tribunal in Israel.

If a foreign judgment is enforced by an Israel court, it generally will be payable in Israeli currency. Judgment creditors must bear the risk of unfavorable exchange rates.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 8. Indemnification of Directors and Officers

The Israeli Companies Law, 5759-1999, or the Companies Law, describes the fiduciary duty of an office holder as a duty to act in good faith and for the benefit of the company, including by refraining from actions in which he has a conflict of interest or that compete with the company's business, refraining from exploiting a business opportunity of the company in order to gain a benefit for himself or for another person, and disclosing to the company any information and documents which are relevant to the company and that were obtained by him in his or her capacity as an office holder. The duty of care is defined as an obligation of caution of an office holder that requires the office holder to act at a level of competence at which a reasonable office holder would have acted in the same position and under the same circumstances, including by adopting reasonable means for obtaining information concerning the profitability of the act brought for his approval.

Under the Companies Law, a company may not exempt an office holder from liability with respect to a breach of his fiduciary duty, but may exempt in advance an office holder from his liability to the company, in whole or in part, with respect to a breach of his duty of care.

Pursuant to the Companies Law, a company may indemnify an office holder against a monetary liability imposed on him by a court including in settlement or arbitration proceedings, and against reasonable legal expenses in a civil proceeding or in a criminal proceeding in which the office holder was found to be innocent or in which he was convicted of an offense which does not require proof of a criminal intent. The indemnification of an office holder must be expressly allowed in the articles of association, under which the company may (i) undertake in advance to indemnify its office holders with respect to categories of events that can be foreseen at the time of giving such undertaking and up to an amount determined by the board of directors to be reasonable under the circumstances, or (ii) provide indemnification retroactively at amounts deemed to be reasonable by the board of directors.

A company may also procure insurance for an office holder's liability in consequence of an act performed in the scope of his office, in the following cases: (a) a breach of the duty of care of such office holder, (b) a breach of the fiduciary duty, only if the office holder acted in good faith and had reasonable grounds to believe that such act would not be detrimental to the company, or (c) a monetary obligation imposed on the office holder for the benefit of another person.

A company may not indemnify an office holder against, nor enter into an insurance contract which would provide coverage for, any monetary liability incurred as a result of any of the following:

- a breach by the office holder of his fiduciary duty unless the office holder acted in good faith and had a reasonable basis to believe that the act would not prejudice the company;
- a breach by the office holder of his duty of care if such breach was done intentionally or recklessly; any act or omission done with the intent to derive an illegal personal gain; or
- any fine or penalty levied against the office holder as a result of a criminal offense.

In addition, under the Companies Law, indemnification of, and procurement of insurance coverage for a company's office holders must be approved by the company's audit committee and board of directors and, in specified circumstances, by the company's shareholders.

Our Articles of Association allow the Company to exempt any office holder to the maximum extent permitted by law, before or after the occurrence giving rise to such exemption. Our Articles of Association also provide that we may indemnify an office holder to the maximum extent permitted by law, against any liabilities he or she may incur in such capacity, limited with respect (i) to the categories of events that can be foreseen in advance by our board of directors when authorizing such undertaking and (ii) to the amount of such indemnification as determined retroactively by our board of directors to be reasonable in the particular circumstances. Similarly, we may also agree to indemnify an office holder for past occurrences, whether or not we are obligated under any agreement to provide such indemnification. We have obtained directors' and officers' liability insurance covering our officers and directors and those of our subsidiaries for certain claims. In addition, as of July 31, 2007, we received approval of our shareholders authorizing us to provide our directors and officers with letters granting them indemnification to the fullest extent permitted under Israeli law, and we have subsequently provided such letters.

Our Articles of Association also allow us to procure insurance covering any past or present office holder against any liability which he or she may incur in such capacity, to the maximum extent permitted by law. Such insurance may also cover us for indemnifying such office.

Item 9. Exhibits

Exhibit Number	Description
4.1	Specimen Certificate for Ordinary Shares (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form F-1/A filed with the Securities and Exchange Commission on August 2, 2000)
5.1	Opinion of Meitar Liquornik Geva & Leshem Brandwein
23.1	Consent of Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global
23.2	Consent of Kesselman & Kesselman (C.P.A Isr.), a member firm of PricewaterhouseCoopers International Limited
23.3	Consent of Meitar Liquornik Geva & Leshem Brandwein (included in Exhibit 5.1)
24	Power of Attorney (included on the signature page)

Item 10. 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 of 1933;

(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 a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(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), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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.

(4) To file a post-effective amendment to the registration statement to include any financial statements required by Item 8.A. of Form 20-F at the start of any delayed offering or throughout a continuous offering; provided, however, that a post-effective amendment need not be filed to include financial statements and information required by Section 10(a)(3) of the Act or §210.3-19 if such financial statements and information are contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement.

(5) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) If the registrant is relying on Rule 430B:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of

prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any persons that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(6) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424; (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant; (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) 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 of 1933 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 of whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

(d) The undersigned registrant hereby further undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance under Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4), or 497(h) under the Securities Act of 1933 shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus 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.

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 F-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunder duly authorized, in the city of Tel Aviv, Israel, on August 10, 2009.

COMPUGEN LTD.

By: /s/ ANAT COHEN-DAYAG

Name: Anat Cohen-Dayag

Title: President and Co-Chief Executive Officer

By: /s/ MARTIN GERSTEL

Name: Martin Gerstel

Title: Co-Chief Executive Officer

POWER OF ATTORNEY

That the undersigned officers and directors of CompuGen Ltd., an Israeli corporation, do hereby constitute and appoint Martin Gerstel, Co-Chief Executive Officer, Anat Cohen-Dayag, President and Co-Chief Executive Officer, and Dikla Czaczkes Axselbrad, Chief Financial Officer, and each of them individually, with full powers of substitution and resubstitution, the lawful attorneys-in-fact and agents with full power and authority to do any and all acts and things and to execute any and all instruments which said attorneys and agents, determine may be necessary or advisable or required to enable said corporation to comply with the Securities Act of 1933, as amended, and any rules or regulations or requirements of the Securities and Exchange Commission in connection with this Registration Statement. Without limiting the generality of the foregoing power and authority, the powers granted include the power and authority to sign the names of the undersigned officers and directors in the capacities indicated below to this Registration Statement, to any and all amendments, both pre-effective and post-effective, and supplements to this Registration Statement, and to any and all instruments or documents filed as part of or in conjunction with this Registration Statement or amendments or supplements thereof, and each of the undersigned hereby ratifies and confirms that said attorneys and agents, shall do or cause to be done by virtue hereof. This Power of Attorney may be signed in several counterparts.

IN WITNESS WHEREOF, each of the undersigned has executed this Power of Attorney as of the date indicated.

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

Signature	Title	Date
<u>/s/ ANAT COHEN-DAYAG</u>	President and Co- Chief Executive Officer (Principal Executive Officer)	August 10, 2009
Anat Cohen-Dayag		
<u>/s/ MARTIN GERSTEL</u>	Co-Chief Executive Officer and Director (Principal Executive Officer)	August 10, 2009
Martin Gerstel		
<u>/s/ DIKLA CZACZKES AXSELBRAD</u>	Chief Financial Officer (Principal Accounting Officer)	August 10, 2009
Dikla Czaczkes Axselbrad		

Signature	Title	Date
<u>/s/ DOV HERSHBERG</u>	Chairman of the Board of Directors	August 10, 2009
Dov Hershberg		
<u>/s/ YAIR AHARONOWITZ</u>	Director	August 10, 2009
Yair Aharonowitz		
<u>/s/ RUTH ARNON</u>	Director	August 10, 2009
Ruth Arnon		
<u>/s/ ALEX KOTZER</u>	Director	August 10, 2009
Alex Kotzer		
<u>/s/ ARIE OVADIA</u>	Director	August 10, 2009
Arie Ovadia		
<u>/s/ JOSHUA SHEMER</u>	Director	August 10, 2009
Joshua Shemer		

EXHIBIT INDEX

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5.1	Opinion of Meitar Liquornik Geva & Leshem Brandwein
23.1	Consent of Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global
23.2	Consent of Kesselman & Kesselman (C.P.A Isr.), a member firm of PricewaterhouseCoopers International Limited
23.3	Consent of Meitar Liquornik Geva & Leshem Brandwein (included in Exhibit 5.1)
24	Power of Attorney (included on the signature page)

Exhibit 5.1

Opinion and consent of Meitar Liquornik Geva & Leshem Brandwein

August 11, 2009

Compugen Ltd.
72 Pinchas Rosen Street
Tel Aviv, 69512 Israel

Re: Registration Statement on Form F-3

Gentlemen:

We have acted as Israeli counsel to Compugen Ltd., a company organized under the laws of the State of Israel (the “Company”), in connection with the registration statement on Form F-3 (the “Registration Statement”) filed with the Securities and Exchange Commission under the Securities Act of 1933 (the “Securities Act”) covering ordinary shares of the Company, par value New Israeli Shekel 0.01 per share (the “Shares”).

In connection with this opinion, we have examined originals or copies, certified or otherwise identified to our satisfaction, of the Registration Statement and such other agreements, certificates, resolutions, minutes and other statements of corporate officers and other representatives of the Company and others and other documents provided to us by the Company as we have deemed necessary or appropriate as a basis for this opinion.

In rendering an opinion on the matters hereinafter set forth, we have assumed the authenticity of all original documents submitted to us as certified, conformed or photographic copies thereof, the genuineness of all signatures and the due authenticity of all persons executing such documents. We have assumed the same to have been properly given and to be accurate. We have also assumed the truth of all facts communicated to us by the Company and that all consents, minutes and protocols of meetings of the Company’s board of directors and its audit committee which have been provided to us are true and accurate and have been properly prepared in accordance with the Company’s memorandum and articles of association and all applicable laws. In addition, we have assumed that the Company will receive the full consideration for the Shares.

Members of our firm are admitted to the Bar in the State of Israel, and we do not express any opinion as to the laws of any other jurisdiction. This opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized and reserved for issuance and, when issued and paid for, will be legally issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion letter as an exhibit to the Registration Statement. We also consent to the appearance of our firm’s name under the caption “Legal Matters” in the Registration Statement. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act, the rules and regulations of the Securities and Exchange Commission promulgated thereunder or Item 509 of Regulation S-K promulgated under the Securities Act.

This opinion letter is rendered as of the date hereof and we disclaim any obligation to advise you of facts, circumstances, events or developments that may be brought to our attention after the effective date of the Registration Statement that may alter, affect or modify the opinions expressed herein.

Very truly yours,
/s/ Meitar Liquornik Geva & Leshem
Brandwein

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the reference to our firm under the caption “Experts” in the Registration Statement (Form F-3) and related Prospectus of Compugen Ltd. for the registration of its ordinary shares and to the incorporation by reference therein of our report dated March 16, 2009, with respect to the consolidated financial statements of Compugen Ltd. included in its Annual Report (Form 20-F) for the year ended December 31, 2008, filed with the Securities and Exchange Commission.

/s/ KOST FORER GABBAY
& KASIERER, a member of
Ernst & Young Global

Tel Aviv, Israel
August 11, 2009

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form F-3 of Compugen Ltd., of our report dated March 13, 2008 relating to the 2007 financial statements of Keddem Bio-Science, which appears in the Annual Report on Form 20-F for the year ended December 31, 2008, of Compugen Ltd.

We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ KESSELMAN &
KESSELMAN, (C.P.A Isr.), a
member firm of
PricewaterhouseCoopers
International Limited

Tel Aviv, Israel
August 11, 2009