

COMPUGEN LTD
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 Registration No. 333-185910

PROSPECTUS SUPPLEMENT
 (to Prospectus dated January 16, 2013)

6,000,000 shares

Ordinary Shares

We are offering 6,000,000 ordinary shares. Our ordinary shares are traded on The NASDAQ Global Market and on the Tel Aviv Stock Exchange (TASE) under the symbol "CGEN." The closing sale price of our ordinary shares on The NASDAQ Global Market and on the TASE on February 27, 2014, was \$14.20 and \$13.36 per share, respectively. The currency in which our stock is traded on the TASE is the New Israeli Shekel, or NIS. The above closing price on the TASE represents a conversion from NIS to U.S. dollar amounts in accordance with the U.S. dollar - NIS conversion rate reported by the Bank of Israel as of such date.

Investing in our ordinary shares involves a high degree of risk. Please read "Risk Factors" beginning on page S-4 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement.

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

	Per share	Total
Public Offering Price	\$10.50	\$63,000,000
Underwriting Discounts and Commissions	\$0.63	\$3,780,000
Proceeds to Compugen, before expenses	\$9.87	\$59,220,000

Delivery of the ordinary shares is expected to be made on or about March 5, 2014. We have granted the underwriters an option for a period of 30 days to purchase up to an additional 900,000 ordinary shares. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be \$4,347,000 and the total proceeds to us, before expenses, will be \$68,103,000.

Sole Book-Running Manager
 Jefferies

Co-Managers
 JMP Securities Oppenheimer & Co. Chardan Capital Markets

Prospectus Supplement dated February 28, 2014

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You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any free writing prospectus that we have authorized for use in connection with this offering. Neither we nor the underwriters have authorized anyone to provide you with information different from that contained in this prospectus supplement, the accompanying prospectus or any accompanying free writing prospectus. We are offering to sell, and seeking offers to buy, ordinary shares only in jurisdictions where offers and sales are permitted. If anyone provides you with different or inconsistent information, you should not rely on it. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The information contained in this prospectus supplement, the accompanying prospectus and any accompanying free writing prospectus is accurate only as of the date of this prospectus supplement, the accompanying prospectus and any such accompanying free writing prospectus, regardless of the time of delivery of this prospectus supplement, the accompanying prospectus, any such accompanying free writing prospectus or of any sale of our ordinary shares. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement entitled "Where You Can Find More Information" and "Incorporation of Certain Documents by Reference."

We are offering to sell, and seeking offers to buy, our ordinary shares only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement, the accompanying prospectus or any free writing prospectus and the offering of the ordinary shares in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement, the accompanying prospectus or any free writing prospectus must inform themselves about, and observe any restrictions relating to, the offering of the ordinary shares and the distribution of this prospectus supplement, the accompanying prospectus and any free writing prospectus outside the United States. This prospectus supplement, the accompanying prospectus and any free writing prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement, the accompanying prospectus or any free writing prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

About this Prospectus Supplement

On January 7, 2013, we filed with the Securities and Exchange Commission, or SEC, a registration statement on Form F-3 (File No. 333-185910) utilizing a shelf registration process relating to the securities described in this prospectus supplement, which registration statement became effective on January 16, 2013. Under this shelf registration process, we may, from time to time, sell ordinary shares and other securities, of which this offering is a part.

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into the prospectus. The second part, the accompanying prospectus, gives more general information, some of which does not apply to this offering. Generally, when we refer to this prospectus, we are referring to both parts of this document combined.

If the description of the offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in the accompanying prospectus — the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in the prospectus supplement or the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary may not contain all the information that you should consider before investing in our securities. You should read the entire prospectus supplement and the accompanying prospectus carefully, including the “Risk Factors” section contained in this prospectus supplement, the accompanying prospectus, the documents incorporated herein by reference, and in any free writing prospectus that we have authorized for use in connection with this offering, before making an investment decision. This prospectus supplement may add to, update or change information contained in or incorporated by reference in the accompanying prospectus.

Unless we have indicated otherwise, or the context otherwise requires, references in this prospectus supplement to “Compugen,” “the company,” “we,” “us” and “our” refer to Compugen Ltd. and its subsidiaries.

Compugen Ltd.

Overview

We are a drug discovery and development company utilizing a broadly applicable proprietary infrastructure for the in silico (by computer) prediction and selection of human therapeutic product candidates, which are then advanced in our Pipeline Program. The initial fields of focus selected by us are monoclonal antibodies, or mAbs, and therapeutic proteins to address major unmet needs in the fields of oncology and immunology. Beginning in late 2010, we established the Pipeline Program, consisting of targets and product candidates for applications in oncology and immunology, based largely on novel immune checkpoint regulator candidates discovered by us during our first focused discovery program. Our business model includes entering into collaborations covering the further development and commercialization of product candidates at various stages from our Pipeline Program and various forms of research and discovery agreements, in both cases providing us with potential fees, research revenues, milestones, royalties and other revenue sharing payments.

Our Predictive Discovery Infrastructure

Our continuously growing discovery infrastructure, established over more than a decade of pioneering research with respect to key biological phenomena, consists of a multi-dimensional platform integrating proprietary scientific understandings and predictive models, algorithms, machine learning systems and other computational biology capabilities.

Our Initial Fields of Focus

Oncology and immunology are both areas of complex and challenging diseases with significant unmet medical needs. Therefore, these are areas of high industry interest with numerous efforts to identify novel therapeutic solutions. Our science-driven predictive capabilities are well suited for the identification of novel therapeutic candidates for these complex, multi-factorial and challenging therapeutic fields.

Our Pipeline Program

Our Pipeline Program consists of therapeutic product candidates at various stages ranging from target validation to pre-clinical studies. The aim of the Pipeline Program is to advance in our validation pipeline mAb targets and mAbs against such targets, and Fc fusion protein therapeutics, in each case discovered by us, in the fields of oncology and immunology and to further advance selected molecules beyond their animal proof of concept stage. The newly discovered candidates enter the Pipeline Program when they begin experimental evaluation following their in silico prediction and selection. These candidates then undergo in vitro and in vivo experimental validation, with selected candidates eventually being advanced toward pre-clinical, and, in selected cases, possibly future clinical activities. The experimental validation studies are conducted at our facilities, or at expert laboratories, selected specifically for each relevant field. In the case of drug targets for mAbs, target functional characterization and other validation studies, selected based on the nature of the target, confirming the target's therapeutic potential are undertaken, followed by the generation of a therapeutic mAb to be used for in vitro and in vivo proof of concept studies in disease animal models. mAb candidates, either humanized or fully-human, selected to be advanced to pre-IND studies, will then enter the stage of lead

candidate selection and optimization. For specific candidates we may choose to continue development into further clinical activities. With respect to therapeutic protein product candidates that have either been or will be successfully validated in vitro, these candidates are further advanced to in vivo proof of concept studies in disease animal models and to mechanism of action studies to explore their novel biology, followed by the selection of the final therapeutic form of the molecule to be used at later development stages.

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Bayer Collaboration

In August 2013, we entered into a Research and Development Collaboration and License Agreement with BayerPharma AG (Bayer) for the research, development, and commercialization of antibody-based therapeutics against two novel, Compugen-discovered immune checkpoint regulators in our Pipeline Program, CGEN 15001T and CGEN 15022. Under this agreement, we received an upfront payment of \$10 million, and we are eligible to receive an aggregate of over \$500 million in potential milestone payments for both programs, not including aggregate preclinical milestone payments of up to \$30 million during the research programs.

Additionally, we are eligible to receive mid- to high single digit royalties on global net sales of any approved products under the collaboration. We and Bayer will jointly pursue a preclinical research program with respect to each of the two immune checkpoint regulators. A joint steering committee consisting of representatives from each party will be responsible for overseeing and directing each such research program pursuant to an agreed upon workplan. Following each such research program, Bayer will have full control over further clinical development of any cancer therapeutic product candidates targeting the Compugen-discovered immune checkpoint regulators and will have worldwide commercialization rights for any approved products.

Corporate Information

Our legal and commercial name is Compugen Ltd. We were incorporated on February 10, 1993 as an Israeli corporation. The legislative framework within which Compugen Ltd. now operates is the Israeli Companies Law, 5759-1999, as amended (the “Companies Law”), which originally became effective on February 1, 2000, and the Israeli Companies Ordinance (New Version) 1983, as amended.

We have a wholly owned subsidiary, Compugen USA, Inc., which was incorporated in Delaware in March 1997 and is qualified to do business in California.

Our principal executive offices are located at 72 Pinchas Rosen Street, Tel Aviv, Israel 6951294. Our telephone number is +972-3-765-8585 and our website address is

www.cgen.com. The information on our website is not incorporated by reference into this prospectus, is not considered a part of this prospectus and should not be relied upon with respect to this offering.

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THE OFFERING

Ordinary shares offered by us:	6,000,000 shares
Underwriters' option to purchase additional shares:	Up to 900,000 additional shares.
Ordinary shares to be outstanding immediately after this offering:	47,407,305 shares

Use of proceeds: We intend to use the net proceeds from this offering for development of our Pipeline Program product candidates and for other general corporate purposes, including, but not limited to, repayment of any future indebtedness, working capital, intellectual property protection and enforcement, capital expenditures, investments, acquisitions or collaborations, research and development and product development. See "Use of Proceeds" on page S-7 of this prospectus supplement.

Risk factors: Investing in our ordinary shares involves significant risks. See "Risk Factors" on page S-4 of this prospectus supplement and on page 3 of the accompanying prospectus and the documents incorporated by reference herein.

Trading markets: Our ordinary shares are traded on The NASDAQ Global Market and on the Tel Aviv Stock Exchange (TASE) under the symbol "CGEN."

The number of ordinary shares to be outstanding immediately after this offering as shown above is based on 41,407,305 shares outstanding as of February 1, 2014, and excludes as of that date:

- 6,003,051 ordinary shares issuable upon the exercise of outstanding options to purchase ordinary shares, having a weighted average exercise price of \$3.86 per share;
- 500,000 ordinary shares issuable upon the exercise of warrants at an exercise price of \$7.50 per share;
- ordinary shares potentially issuable under our funding agreement with Baize Investments (Israel) Ltd.; and
- an aggregate of 1,828,885 ordinary shares reserved for future issuance under our equity incentive plans.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase up to an additional 900,000 shares.

RISK FACTORS

An investment in our ordinary shares involves a high degree of risk. Before deciding whether to invest in our ordinary shares, you should consider carefully the risks described below and discussed under the section captioned “Item 3. – Key Information – Risk Factors” contained in our Annual Report on Form 20-F for the year ended December 31, 2013, as filed with the SEC on February 18, 2014, which is incorporated by reference in the prospectus supplement and the accompanying prospectus in their entirety, together with other information in this prospectus supplement, the accompanying prospectus, the information and documents incorporated by reference, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually occurs, our business, financial condition, results of operation or cash flow could be seriously harmed. This could cause the trading price of our ordinary shares to decline, resulting in a loss of all or part of your investment.

Risks Related to our Ordinary Shares and this Offering

Our management will have broad discretion in the use of the net proceeds we receive in this offering and might not apply the proceeds in ways that increase the value of your investment.

Our management will have broad discretion over the use of our net proceeds from this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment and we might not be able to yield a significant return, if any, on any investment of these net proceeds. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our products and cause the price of our ordinary shares to decline.

Investors in this offering will experience immediate and substantial dilution.

The public offering price of the shares offered pursuant to this prospectus supplement is substantially higher than the net tangible book value per share of our ordinary shares. Therefore, if you purchase securities in this offering, you will incur immediate and substantial dilution in the net tangible book value per share from the price per share that you pay. If the holders of outstanding options, warrants or other rights to acquire shares exercise those options, warrants or rights at prices below the public offering price, you will incur further dilution. See the section entitled “Dilution” herein for a more detailed discussion of the dilution associated with this offering.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

We have included or incorporated by reference into this prospectus supplement, the accompanying prospectus, the documents incorporated by reference herein and in any free writing prospectus that we have authorized for use in connection with this offering, statements that may constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Forward-looking statements may be identified by words including “believe,” “anticipate,” “should,” “intend,” “plan,” “will,” “expect,” “estimate,” “project,” “positioned,” “strategy,” and expressions. Such statements are based on our management’s current expectations and involve risks and uncertainties. Our actual results and performance could differ materially from those projected in the forward-looking statements as a result of many factors, including those discussed in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference herein and in any free writing prospectus that we have authorized for use in connection with this offering. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. While we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus supplement, the accompanying prospectus, the

documents incorporated by reference herein and in any free writing prospectus that we have authorized for use in connection with this offering, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain.

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In addition, you should refer to the “Risk Factors” section of this prospectus supplement and the accompanying prospectus and the documents incorporated by reference herein for a discussion of other important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these and other factors, we cannot assure you that the forward-looking statements in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference herein or in any free writing prospectus that we have authorized for use in connection with this offering will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. You should not place undue reliance on these forward-looking statements, which apply only as of the date of this prospectus supplement. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference herein and in any free writing prospectus that we have authorized for use in connection with this offering completely and with the understanding that our actual future results may be materially different from what we expect.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in the reports we file with the Securities and Exchange Commission.

CAPITALIZATION AND INDEBTEDNESS

The table below sets forth our capitalization and indebtedness as of December 31, 2013:

• on an actual basis;

- on a pro forma basis to give effect to the sale and issuance of an aggregate of 363,090 ordinary shares for gross proceeds of \$3.9 million under the sales agreement with Cantor Fitzgerald & Co. since December 31, 2013; and
- on a pro forma as adjusted basis to give additional effect to the sale and issuance of 6,000,000 ordinary shares in this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

	As of December 31, 2013		
	Actual (in thousands, except share and data)	Pro Forma	Pro Forma As Adjusted
Indebtedness:			
Research and development funding arrangements	\$ 13,189	\$ 13,189	\$ 13,189
Total indebtedness	13,189	13,189	13,189
Shareholder's equity:			
Ordinary Shares, NIS 0.01 nominal value: 100,000,000 shares authorized; 41,002,113 shares issued and outstanding, actual; 41,365,203 shares issued and outstanding, pro forma; and 47,365,203 shares issued and outstanding, pro forma as adjusted	111	112	129
Additional paid in capital	235,351	239,269	297,592
Accumulated other comprehensive income	4,628	4,628	4,628
Accumulated deficit	\$(208,202)	\$(208,202)	(208,202)
Total shareholders' equity	\$31,888	\$35,807	\$94,147

The number of outstanding ordinary shares set forth above excludes, as of December 31, 2013:

- 6,045,153 ordinary shares issuable upon the exercise of outstanding options to purchase ordinary shares, having a weighted average exercise price of \$3.86 per share;
 - 500,000 ordinary shares issuable upon the exercise of warrants at an exercise price of \$7.50 per share;
 - ordinary shares potentially issuable under our funding agreement with Baize Investments (Israel) Ltd.; and
 - an aggregate of 1,828,885 ordinary shares reserved for future issuance under our equity incentive plans.

USE OF PROCEEDS

We expect to receive approximately \$58.3 million in net proceeds from this offering (or approximately \$67.1 million in net proceeds from this offering if the underwriters' option to purchase additional shares is exercised in full). "Net proceeds" is what we expect to receive after paying underwriting discounts and commissions, as described in "Underwriting" below, and other estimated offering expenses payable by us, which include legal, accounting and printing fees.

We intend to use the net proceeds from this offering for development of our Pipeline Program product candidates and for other general corporate purposes, including, but not limited to, repayment of any future indebtedness, working capital, intellectual property protection and enforcement, capital expenditures, investments, acquisitions or collaborations, research and development and product development. We have not determined the amount of net proceeds to be used specifically for the foregoing purposes. As a result, our management will have broad discretion in the allocation of the net proceeds. Pending use of the net proceeds, we intend to invest any proceeds in a variety of capital preservation instruments, including short-term, investment-grade, interest-bearing instruments.

DILUTION

If you invest in our ordinary shares in this offering, your ownership interest will be immediately diluted to the extent of the difference between the initial public offering price per share and the net tangible book value per ordinary share after this offering. Net tangible book value per ordinary share is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of ordinary shares outstanding. Our net tangible book value as of December 31, 2013 was \$31.9 million, or \$0.78 per ordinary share. Our pro forma net tangible book value as of December 31, 2013, after giving effect to the sale and issuance of an aggregate of 363,090 ordinary shares for gross proceeds of \$3.9 million under the sales agreement with Cantor Fitzgerald & Co. since December 31, 2013, was approximately \$35.8 million, or \$0.87 per ordinary share.

After giving effect to the sale of 6,000,000 ordinary shares in this offering at a public offering price of \$10.50 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2013 would have been \$94.1 million, or \$1.99 per ordinary share. This represents an immediate increase in the net tangible book value of \$1.12 per ordinary share to our existing shareholders and an immediate and substantial dilution in net tangible book value of \$8.51 per ordinary share to new investors. The following table illustrates this per share dilution:

Public offering price per share		\$10.50
Pro forma net tangible book value per share as of December 31, 2013	\$ 0.87	
Increase in pro forma net tangible book value per share attributable to new investors	1.12	
Pro forma as adjusted net tangible book value per share after this offering	1.99	
Net dilution per share to new investors		\$8.51

If the underwriters exercise their option to purchase additional shares in full, our pro forma as adjusted net tangible book value per ordinary share will be \$2.13 representing an immediate increase in net tangible book value per share attributable to this offering of \$1.26 to our existing investors and an immediate dilution per share to new investors in this offering of \$8.37.

The information above is based on 41,002,113 ordinary shares outstanding as of December 31, 2013, and does not include the following as of December 31, 2013:

- 6,045,153 ordinary shares issuable upon the exercise of outstanding options to purchase ordinary shares, having a weighted average exercise price of \$3.86 per share;
 - 500,000 ordinary shares issuable upon the exercise of warrants at an exercise price of \$7.50 per share;
 - ordinary shares potentially issuable under our agreement with Baize Investments (Israel) Ltd.; and
 - an aggregate of 1,828,885 ordinary shares reserved for future issuance under our equity incentive plans.

To the extent that outstanding options or warrants outstanding as of December 31, 2013 have been or may be exercised, investors purchasing our securities in this offering may experience further dilution.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated February 28, 2014, between us and Jefferies LLC, as the representative of the underwriters named below and the sole book-running manager of this offering, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of ordinary shares shown opposite its name below:

Underwriter	Number of Ordinary Shares
Jefferies LLC	4,200,000
JMP Securities LLC	750,000
Oppenheimer & Co. Inc.	750,000
Chardan Capital Markets, LLC	300,000
Total	6,000,000

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the ordinary shares if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the ordinary shares as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the ordinary shares, that you will be able to sell any of the ordinary shares held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the ordinary shares subject to their acceptance of the ordinary shares from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commission and Expenses

The underwriters have advised us that they propose to offer the ordinary shares to the public at the initial public offering price set forth on the cover page of this prospectus supplement and to certain dealers, which may include the underwriters, at that price less a concession not in excess of \$0.378 per ordinary share. After the offering, the initial public offering price, concession and reallowance to dealers may be reduced by the representative. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional ordinary shares.

	Per Share		Total	
	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares
Public offering price	\$ 10.50	\$ 10.50	\$63,000,000	\$72,450,000
Underwriting discounts and commissions paid by us	\$0.63	\$0.63	\$3,780,000	\$4,347,000
Proceeds to us, before expenses	\$9.87	\$9.87	\$59,220,000	\$68,103,000

In addition, upon the closing of this offering, we will pay to Torrey Capital, or Torrey, a financial advisory fee equal to 1% of the gross proceeds we receive in this offering (the "Advisor's Fee"). Torrey is not acting as an underwriter in connection with this offering. We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions and the Advisor's Fee referred to above, will be approximately \$250,000. We have agreed to reimburse the underwriters a maximum of \$10,000 for their FINRA counsel fee. In accordance with FINRA Rule 5110, this reimbursed fee is deemed underwriting compensation for this offering. The underwriters have also agreed to reimburse us for certain of our expenses. In addition, in connection with this offering, we may at our absolute and sole discretion pay Jefferies LLC an incentive fee of up to 0.5% of the gross proceeds we receive in this offering.

Listing

Our ordinary shares are listed on The NASDAQ Global Market and the Tel Aviv Stock Exchange under the trading symbol "CGEN".

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of 900,000 ordinary shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional ordinary shares proportionate to that underwriter's initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus.

No Sales of Similar Securities

We and our officers and directors have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-1(h) under the Securities Exchange Act of 1934, as amended, or
- otherwise dispose of any ordinary shares, options or warrants to acquire ordinary shares, or securities exchangeable or exercisable for or convertible into ordinary shares currently or hereafter owned either of record or beneficially, or
- publicly announce an intention to do any of the foregoing for a period of 90 days after the date of this prospectus supplement without the prior written consent of Jefferies LLC.

This restriction terminates 90 days after the date of this prospectus supplement. However, subject to certain exceptions, in the event that either:

• during the last 17 days of the 90-day restricted period, we issue an earnings release or material news or a material event relating to us occurs, or

• prior to the expiration of the 90-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 90-day restricted period,

then in either case the expiration of the 90-day restricted period will be extended until the expiration of the 18-day period beginning on the date of the issuance of an earnings release or the occurrence of the material news or event, as applicable, unless Jefferies LLC waives, in writing, such an extension.

Jefferies LLC may, in its sole discretion and at any time or from time to time before the termination of the 90-day period, without public notice, release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our shareholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that they, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, and certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the ordinary shares at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either "covered" short sales or "naked" short sales.

"Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional ordinary shares in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing our ordinary shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

"Naked" short sales are sales in excess of the option to purchase additional ordinary shares. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our ordinary shares in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of ordinary shares on behalf of the underwriters for the purpose of fixing or maintaining the price of the ordinary shares. A syndicate covering transaction is the bid for or the purchase of ordinary shares on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter's purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our ordinary shares or preventing or retarding a decline in the market price of our ordinary shares. As a result, the price of our ordinary shares may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the ordinary shares originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

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Neither we, nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our ordinary shares. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

The underwriters may also engage in passive market making transactions in our ordinary shares on The NASDAQ Global Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of our ordinary shares in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of ordinary shares for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the ordinary shares offered hereby. Any such short positions could adversely affect future trading prices of the ordinary shares offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

NOTICE TO INVESTORS

Australia

This prospectus is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the shares issued to you pursuant to this prospectus for resale in Australia within 12 months of those shares being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

European Economic Area

In relation to each member state of the European Economic Area which has implemented the Prospectus Directive, each referred to herein as a Relevant Member State, with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, referred to herein as the Relevant Implementation Date, no offer of any securities which are the subject of the offering contemplated by this prospectus has been or will be made to the public in that Relevant Member State other than any offer where a prospectus has been or will be published in relation to such securities that has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the relevant competent authority in that Relevant Member State in accordance with the Prospectus Directive, except that with effect from and including the Relevant Implementation Date, an offer of such securities may be made to the public in that Relevant Member State:

- to any legal entity which is a "qualified investor" as defined in the Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representative of the underwriters for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of securities shall require the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32) of Hong Kong. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, and has not been filed with or approved by the Israel Securities Authority. Any offer of the ordinary shares in the State of Israel and this prospectus will be directed only to, and this prospectus will be distributed only to, investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals", each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors will be required to submit written confirmation that they fall within the scope of the Addendum before making any purchase of shares in this offering.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the Initial Purchaser will not offer or sell any securities, directly

or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means, unless otherwise provided herein, any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

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Singapore

This prospectus has not been and will not be lodged or registered with the Monetary Authority of Singapore.

Accordingly, this prospectus and any other document or material in connection with the offer or sale, or the invitation for subscription or purchase of the securities may not be issued, circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person as defined under Section 275(2), or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions, specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of any other applicable provision of the SFA.

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor as defined under Section 4A of the SFA) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor,

shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired the Offer Shares under Section 275 of the SFA except:

- to an institutional investor under Section 274 of the SFA or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than \$200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions, specified in Section 275 of the SFA;
- where no consideration is given for the transfer; or
- where the transfer is by operation of law.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, or FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, referred to herein as the Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated. Each such person is referred to herein as a Relevant Person.

This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a Relevant Person should not act or rely on this document or any of its contents.

LEGAL MATTERS

Certain legal matters with respect to the validity of the issuance of the securities offered by this prospectus supplement will be passed upon for us by Tulchinsky Stern Marciano Cohen Levitski & Co., Tel Aviv, Israel. Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts, is acting as our U.S. counsel in connection with this offering. The underwriters are being represented in connection with this offering by Goodwin Procter LLP, New York, New York, and Gornitzky & Co., Tel Aviv, Israel.

EXPERTS

The consolidated financial statements of Compugen Ltd. appearing in the Annual Report (Form 20-F) for the year ended December 31, 2013 and the effectiveness of Compugen Ltd. internal control over financial reporting as of December 31, 2013, have been audited by Kost Forer Gabbay & Kasierer, a Member of Ernst & Young Global, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements and Company management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2013 are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

EXPENSES

We estimate that the total expenses of this offering payable by us, excluding the underwriting discounts and commissions and reimbursement of underwriter expenses and the Advisor's Fee, will be approximately \$250,000 as follows:

T r a n s f e r a g e n t f e e s a n d expenses	\$ 5,000
Printer fees and expenses	10,000
Legal fees and expenses	150,000
Accounting fees and expenses	80,000

Miscellaneous	5,000
Total	\$ 250,000

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WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement is part of a registration statement on Form F-3 that we filed with the SEC relating to the securities offered by this prospectus supplement, which includes additional information. You should refer to the registration statement and its exhibits for additional information. Whenever we make reference in this prospectus supplement to any of our contracts, agreements or other documents, the references are not necessarily complete and you should refer to the exhibits attached to the registration statement for copies of the actual contract, agreements or other document.

We are subject to the informational requirements of the Exchange Act applicable to foreign private issuers. We, as a “foreign private issuer,” are exempt from the rules under the Exchange Act prescribing certain disclosure and procedural requirements for proxy solicitations, and our officers, directors and principal shareholders are exempt from the reporting and “short-swing” profit recovery provisions contained in Section 16 of the Exchange Act, with respect to their purchases and sales of shares. In addition, we are not required to file annual, quarterly and current reports and financial statements with the SEC as frequently or as promptly as U.S. companies whose securities are registered under the Exchange Act.

You may read and copy any materials we file or furnish with the SEC at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of the documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, DC 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. You can review our SEC filings and the registration statement by accessing the SEC’s internet site at <http://www.sec.gov>.

We also maintain a website at www.cgen.com, through which you can access certain SEC filings. The information set forth on our website is not part of this prospectus supplement.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and information we file later with the SEC will automatically update and supersede this information. The documents we are incorporating by reference as of their respective dates of filing are:

- Annual Report on Form 20-F for the year ended December 31, 2013, filed on February 18, 2014 (File No. 000-30902);
- Reports on Form 6-K filed on January 7, 2014, January 23, 2014, February 11, 2014 and February 11, 2014; and
- the description of our ordinary shares contained in our Form 8-A filed on August 2, 2000 (File No. 000-30902).

All subsequent annual reports on Form 20-F, Form 40-F or Form 10-K filed by us, all subsequent filings on Forms 10-Q and 8-K filed by us, and all subsequent reports on Form 6-K filed by us that are identified by us as being incorporated by reference shall be deemed to be incorporated by reference into this prospectus supplement and deemed to be a part hereof after the date of this prospectus supplement but before the termination of the offering by this prospectus supplement.

Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for all purposes to the extent that a statement contained in this prospectus supplement, or in any other subsequently filed document which is also incorporated or 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 prospectus supplement.

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You may request, orally or in writing, a copy of these documents, which will be provided to you at no cost, by contacting:

Tami Fishman Jutkowitz
General Counsel
Compugen Ltd.
72 Pinchas Rosen Street
Tel Aviv, 69512 Israel
Phone: +972-3-765-8585
Fax: +972-3-765-8555

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Prospectus

\$100,000,000

Ordinary Shares
Debt Securities
Rights
Warrants
Units

We may offer and sell from time to time in one or more offerings our ordinary shares, debt securities, rights, warrants and units having an aggregate offering price up to \$100,000,000.

Each time we sell securities pursuant to this prospectus, we will provide in a supplement to this prospectus the price and any other material terms of any such offering and the securities offered. 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.

Our ordinary shares are traded on The NASDAQ Capital Market and on the Tel Aviv Stock Exchange under the symbol "CGEN." The closing sale price of our ordinary shares on The NASDAQ Capital Market and on the Tel Aviv Stock Exchange Ltd. (the "TASE") on January 15, 2013, was \$5.52 and \$5.65 per share, respectively. The currency in which our stock is traded on the TASE is the New Israeli Shekel, or NIS. The above closing price on the TASE represents a conversion from NIS to dollar amounts in accordance with the dollar - NIS conversion rate as of such date.

AN INVESTMENT IN OUR SECURITIES INVOLVES RISKS. SEE THE SECTION ENTITLED "RISK FACTORS" BEGINNING ON PAGE 3.

Neither the Securities and Exchange Commission nor any state or other securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This prospectus may not be used to consummate sales of securities unless it is accompanied by a prospectus supplement.

The date of this prospectus is January 16, 2013

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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 SEC, using a “shelf” registration process. Under this shelf registration process, we may from time to time sell ordinary shares, debt securities, rights, warrants or units, or any combination of these securities, in one or more offerings up to a total dollar amount of \$100,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities, we will, to the extent required by law, provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in any accompanying prospectus supplement or any free writing prospectus we may authorize to be delivered to you any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus or any prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement. This prospectus, together with any accompanying prospectus supplement and any free writing prospectus we may authorize to be delivered to you, includes all material information relating to the offering of our securities.

As permitted by the rules and regulations of the SEC, the registration statement, of which this prospectus forms a part, includes additional information not contained in this prospectus. You may read the registration statement and the other reports we file with the SEC at the SEC's web site or at the SEC's offices described below under the heading "Where You Can Find Additional Information."

In this prospectus, unless otherwise stated or the context otherwise requires, references to "Compugen," "the Company," "we," "us", "our" and similar references refer to Compugen Ltd. and our subsidiaries.

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You should rely only on the information contained or incorporated by reference in this prospectus, any accompanying prospectus supplement or any “free writing prospectus” we may authorize to be delivered to you. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information appearing in this prospectus, any prospectus supplement and the documents incorporated by reference herein and therein are accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

Neither this prospectus nor any accompanying prospectus supplement shall constitute an offer or solicitation by anyone in any jurisdiction in which such offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

PROSPECTUS SUMMARY

This summary highlights only some of the information included or incorporated by reference in this prospectus. You should carefully read this prospectus together with the additional information about us described in the sections entitled “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference” before purchasing our securities.

Compugen Ltd.

Compugen is a leading drug discovery company focused on therapeutic proteins and monoclonal antibodies (“mAbs”) to address important unmet needs in the fields of immunology and oncology. We utilize a broad and continuously growing integrated infrastructure of proprietary scientific understandings and predictive platforms, algorithms, machine learning systems and other computational biology capabilities for the in silico (by computer) prediction and selection of novel drug targets and drug candidates. Selected candidates are then incorporated to our Pipeline Program for in vitro and/or in vivo validation testing and preclinical drug development studies. Our business model includes collaborations covering the further development and commercialization of selected candidates from our Pipeline Program and various forms of research and discovery agreements, in both cases providing Compugen with potential milestone payments and royalties on product sales or other forms of revenue sharing. In 2012, we established operations in California to develop oncology and immunology mAb drug candidates against certain drug targets already discovered, and others expected to be discovered in the future, by the Company.

Research and Discovery

For over a decade, most of our R&D efforts were directed towards establishing a unique predictive discovery infrastructure that would enable accurate and broadly applicable in silico drug, drug target, and diagnostic candidate prediction and selection. An important aspect of our infrastructure development was the creation of our core infrastructure platforms, LEADS, MED and NexGen, which integrate our scientific understandings and predictive models. LEADS provides a comprehensive predictive view of the human transcriptome and proteome and enables the discovery of novel genes and proteins. MED provides a broad analysis of the expression levels of genes across a wide variety of tissues and disease states; and NexGen is designed to efficiently and accurately integrate and analyze a vast amount of Next Generation Sequencing data. We believe these infrastructure platforms, together with our other computational biology capabilities and platforms, now provide us with substantial advantages in the predictive discovery of potential targeted medicines. Following the establishment of an integrated “critical mass” of capabilities for predictive discovery, an increasing portion of our R&D activities has been committed to utilizing these capabilities for the discovery of such targeted medicines, while continuing to expand and enhance our discovery infrastructure.

Pipeline Program

During 2010, we broadened our approach to drug target and drug discovery, moving from a “technology driven” individual platform capability approach to a “market-need driven” approach. In this “market-need driven” approach we harness all of our relevant platforms and other capabilities towards a selected unmet need in order to predict and validate novel molecules that we believe have the highest probability of leading to successful targeted medicines for that need. At the same time we chose, as a focus for our discovery efforts, the therapeutic fields of oncology and immunology, both highly complex areas with major unmet needs. Within these fields, we elected to primarily pursue therapeutic proteins and mAbs which represent the fastest growing segment in therapeutics. Based on these changes, in late 2010 we initiated our Pipeline Program, pursuant to which we have both (i) accelerated the number of predicted and selected product candidates being evaluated by us, primarily in our fields of focus, and (ii) taken selected product candidates further beyond their proof of concept into preclinical activities.

Our first “market-need driven” discovery effort within our chosen fields of focus was aimed at the discovery of immune checkpoint regulatory proteins, and this effort has successfully yielded a significant number of such proteins which were previously unknown. In general, each of these novel immune checkpoint proteins has the potential to serve as (i) a drug target for monoclonal antibodies for cancer immunotherapy, and (ii) the basis for Fc fusion proteins for the treatment of autoimmune diseases, both areas of very high interest to the medical community and biopharma industry:

At present, among the product candidates included in our Pipeline Program are the following molecules, which are at various stages from and validation to preclinical studies:

- CGEN-15001 - a novel fusion protein which has shown potential for the treatment of autoimmune diseases;
- CGEN-15021 - a novel fusion protein which has shown potential for the treatment of autoimmune diseases;
- CGEN-15091 - a novel fusion protein which has shown potential for the treatment of multiple sclerosis;
 - CGEN-15001T - a novel mAb drug target candidate for cancer immunotherapy;
 - CGEN-15022 – a novel mAb drug target candidate for cancer immunotherapy;
 - CGEN-671 – a novel mAb drug target candidate for treatment of multiple epithelial tumors;
 - CGEN-928 – a novel mAb drug target candidate for the treatment of multiple myeloma;
 - CGEN 15092 - a novel mAb drug target candidate for cancer immunotherapy.

Consistent with the initiation of our Pipeline Program, in 2010 we began to build in-house preclinical development capabilities that would allow us to further advance our drug candidates prior to entering into collaborations for their final development and commercialization. Our initial efforts resulted in the establishment of capabilities to advance therapeutic proteins at Compugen Ltd. More recently, in March 2012, we established operations in South San Francisco, California for the development of oncology and immunology monoclonal antibody drug candidates against novel mAb drug targets discovered and validated by us.

Opportunities in Non-focus Areas

In view of the wide applicability of our predictive biology capabilities, we have in the past formed, or participated in the formation, of companies to utilize certain of these capabilities in other fields, and have entered into other arrangements for the further development and commercialization of various non-focus specific discoveries of interest, most of which resulted from our infrastructure development and validation activities. In all such cases, these arrangements provide the potential for future financial gain to Compugen without any further financial commitment for either development or commercialization from us. Two such arrangements were concluded during 2012: (i) the joint establishment of a new Israeli company, Neviah Genomics Ltd., with Merck Serono, a division of Merck, Darmstadt, Germany, in the field of toxicity biomarkers, and (ii) a financing arrangement with a United States investment company to allow the further development of Keddem Bioscience Ltd., previously a wholly owned, but inactive, subsidiary of Compugen, in the field of small molecule drugs.

Corporate Information

We were incorporated under the laws of the State of Israel on February 10, 1993 as Compugen Ltd, which is both our legal and commercial name. We have operated under the laws of the State of Israel since 1993 and in particular the Israeli Companies Ordinance (New Version) 1983, as amended, which was largely replaced by the Israeli Companies Law, 5759-1999, as amended (the “Companies Law”). Compugen Inc., a wholly owned subsidiary, was incorporated in Delaware in March 1997 and is qualified to do business in California.

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 www.cgen.com. The information on our website is not incorporated by reference into this prospectus, is not considered a part of this prospectus and should not be relied upon with respect

to any offering.

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RISK FACTORS

Investing in our securities involves risks. 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 part or all 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, or the Securities Act, 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, and any “free writing prospectus” that may be provided by us, 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,” “might,” “expect,” “anticipate,” “objective,” “goal,” “intend,” “estimate,” “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 or in any “free writing prospectus” regarding our future strategy, future operations, timing of possible future events, projected financial position, proposed products, anticipated collaborations, 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, including in many cases decisions or actions by third parties, 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 \$100,000,000. The actual number of securities and 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).

CAPITALIZATION AND INDEBTEDNESS

The table below sets forth our unaudited capitalization and indebtedness as of September 30, 2012.

	September 30, 2012 (in thousands, except share and per share data)
Indebtedness:	
Research and development funding arrangements	\$5,811
Total Indebtedness	5,811
Shareholder's Equity:	
Ordinary Shares, NIS 0.01 nominal value:	
100,000,000 shares authorized and 35,995,311 shares issued and outstanding (1)	97
Additional paid in capital	202,916
Accumulated other comprehensive income	4,424
Accumulated deficit	(188,746)
Total Shareholders' Equity	\$18,691

(1) Does not include as of September 30, 2012 (i) outstanding options to purchase a total of 6,592,211 ordinary shares, at a weighted average exercise price of \$3.31 per share, (ii) outstanding warrants to purchase a total of 500,000 ordinary shares at an exercise price of \$6.00 per share; (iii) 833,334 shares issuable upon the possible forfeiture by Baize of its rights to receive future research and development payments under the funding agreement entered into on December 31, 2010; and, (iv) ordinary shares issuable upon the possible forfeiture by Baize of its right to receive future research and development payments under the funding agreement entered into on December 20, 2011 and amended on July 24, 2012 and December 27, 2012.

PRICE RANGE OF OUR ORDINARY SHARES

Our ordinary shares were listed on The NASDAQ Global Market from August 15, 2000 through June 16, 2009. On June 17, 2009, we transferred the listing of our ordinary shares from The NASDAQ Global Market to The NASDAQ Capital Market. The high and low sales prices per share of our ordinary shares for the periods indicated are set forth below:

Year Ended	High*	Low*
December 31, 2008	\$2.80	\$0.34
December 31, 2009	\$5.86	\$0.39
December 31, 2010	\$5.32	\$3.04
December 31, 2011	\$5.80	\$3.32
December 31, 2012	\$6.47	\$2.96
Quarter Ended		

March 31, 2011	\$5.80	\$4.64
June 30, 2011	\$5.15	\$3.75
September 30, 2011	\$4.67	\$3.32
December 31, 2011	\$5.35	\$3.78
March 31, 2012	\$6.47	\$4.96
June 30, 2012	\$6.19	\$3.33
September 30, 2012	\$4.50	\$2.96
December 31, 2012	\$5.86	\$3.53
Month Ended		
July 31, 2012	\$3.99	\$3.08
August 31, 2012	\$3.82	\$2.96
September 30, 2012	\$4.50	\$3.45
October 31, 2012	\$4.43	\$3.53
November 30, 2012	\$4.60	\$3.59
December 31, 2012	\$5.86	\$4.50

On January 15, 2013, the closing price of our ordinary shares on The NASDAQ Capital Market was \$5.52.

The high and low sales prices per share of our ordinary shares on the Tel Aviv Stock Exchange for the periods indicated are set forth below. The currency in which our stock is traded on the Tel Aviv Stock Exchange is the New Israeli Shekel, or NIS. The below d