COMPUGEN LTD
Form 424B5
February 27, 2014

The information in this prospectus supplement is not complete and may be changed. This prospectus supplement and the accompanying prospectus are not offers to sell these securities, and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED FEBRUARY 27, 2014

Filed Pursuant to Rule 424(b)(5)
Registration No. 333-185910

PROSPECTUS SUPPLEMENT
(to Prospectus dated January 16, 2013)

shares

Ordinary Shares

We are offering 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 26, 2014, was $13.00 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	$	$
Underwriting Discounts and Commissions	$	$
Proceeds to Compugen, before expenses	$	$

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

Sole Book-Running Manager
Jefferies

Co-Managers

JMP Securities	Oppenheimer & Co.	Chardan Capital Markets

Prospectus Supplement dated , 2014

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TABLE OF CONTENTS

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.

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.

THE OFFERING

Ordinary shares offered by us:	shares
Underwriters' option to purchase additional shares:	Up to additional shares.
Ordinary shares to be outstanding immediately after this offering:	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 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," a 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.

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 ordinary shares in this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

	As of December 31, 2013		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except share and per share data)		
Indebtedness:			
Research and development funding arrangements	$13,189	$13,189	
Total indebtedness	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 shares issued and outstanding, pro forma as adjusted	111	112	
Additional paid in capital	235,351		