

COMPUGEN LTD  
Form 20-F  
June 09, 2003

**SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

**FORM 20-F**

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF  
THE SECURITIES EXCHANGE ACT OF 1934**

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2002      COMMISSION FILE NO. 005-60609

---

**Compugen Ltd.**

(Exact name of registrant as specified in its charter and translation of registrant's name into English)

---

**Israel**

(Jurisdiction of incorporation or organization)

**72 Pinchas Rosen Street, Tel Aviv, 69512 Israel**

(Address of principal executive offices)

---

**Securities registered or to be registered pursuant to Section 12(b) of the Act:**

None

**Securities registered or to be registered pursuant to Section 12(g) of the Act:**

Ordinary Shares, par value New Israeli Shekels 0.01 per share

(Title of Class)

**Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:**

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

26,243,446 Ordinary Shares

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days:

Yes  No

Indicate by check mark which financial statement item the registrant has elected to follow:

Item 17  Item 18

\_\_\_\_(1)\_\_\_\_

This annual report on Form 20-F includes "forward-looking" statements within the meaning of Section 21E of the Securities Exchange Act of 1934. We have based these forward-looking statements on information available to us on the date hereof, our current intentions, our beliefs, and expectations or projections about future events. We assume no obligation to update any such forward-looking statements. These statements involve risks and uncertainties and actual results could differ materially from our expectations or projections. Factors that could cause our actual results to differ materially from those projected in the forward-looking statements include the risk factors set forth in this annual report at "Item 3. Risk Factors."

We have prepared our consolidated financial statements in United States dollars and in accordance with accounting principles generally accepted in the United States. All references herein to "dollars" or "\$" are to United States dollars, and all references to "Shekels" or "NIS" are to New Israeli Shekels.

\_\_\_\_(2)\_\_\_\_

**PART I.**

**ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS**

Not applicable.

**ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE**

Not applicable.

**ITEM 3. KEY INFORMATION**

**Selected Financial Data**

The selected financial data is incorporated by reference to Item 5 of this annual report.

**Risk Factors**

This annual report includes forward-looking statements. We have based these forward-looking statements on our current intentions, beliefs, expectations or projections about the future. These forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties and assumptions that could cause our actual results to differ materially from those projected in the forward-looking statements.

***Risks Related to Our Business***

**Our approach of incorporating ideas and methods from mathematics, computer science and physics into the disciplines of biology, organic chemistry and medicine is novel and may not be accepted by our potential customers and/or collaborators.**

Compugen is a drug and diagnostic discovery company and a leader in incorporating ideas and methods from mathematics, computer science and physics into the disciplines of biology, organic chemistry and medicine. Our objective is to significantly increase the probability of success of drug discovery and diagnostic development. Notwithstanding that we have already made discoveries by using this approach, our approach and the products and technologies derived from our approach are novel. As a result, they may prove to be ineffective or not as effective as other methods, or they may not be accepted by our potential customers or collaborators. Our products and technologies may prove to be ineffective if, for instance, they fail to account for the complexity of the life processes that we are now attempting to model. If our customers or collaborators do not accept our products or technologies and/or if our technologies prove to be ineffective our business may fail or we may never become profitable.

**We have a history of losses, we expect to incur future losses and we may never achieve or sustain profitability.**

We incurred net losses of approximately \$13.4 million in 2000, \$15.1 million in 2001, and \$12.2 million in 2002. As of December 31, 2002, we had an accumulated deficit of approximately \$55.7 million (not including approximately \$24.9 million in accumulated deficit attributable to the conversion of preferred shares upon the closing of our initial public offering). We expect to continue to incur net losses and negative cash flows in the future due in part to high research and development expenses, including enhancements to our technologies and investments in new technologies. As a result, we will need to generate significantly higher revenues to achieve profitability. We cannot assure you that we will ever achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability.

\_\_\_\_(3)\_\_\_\_

**Even if our computational technologies are effective as research tools, we or our customers may be unable to develop or commercialize new drugs, therapies or other products based on them.**

Even if our computational technologies perform their intended functions as research tools, we or our customers may be unable to use the discoveries resulting from them to produce new drugs, therapies, diagnostic products or other life science products. Despite recent scientific advances in the life sciences and our improved understanding of biology, the roles of genes and proteins and their involvement in diseases and in other life processes is not well understood. Only a few therapeutic products based on the study of and discoveries relating to genes or proteins have been developed and commercialized. If we and our customers are unable to use our discoveries to make new drugs or other life science products, our business may fail or we may never become profitable.

**There are many risks of failure in the development of drugs, therapies, diagnostic products and other life science products. These risks are inherent to the development and commercialization of these type of products.**

A number of risks of failure are an inseparable from the process of developing and commercializing drugs, therapies, diagnostic products and other life science products. These risks include the possibility that any of these products will:

- be found to be toxic or ineffective;
- fail to receive necessary regulatory approvals;
- be difficult or impossible to manufacture on a large scale;
- be uneconomical to market;
- fail to be developed prior to the successful marketing of similar products by competitors; or
- be impossible to market because they infringe on the proprietary rights of third parties or compete with superior products marketed by third parties.

Any of these risks could materially harm our business and financial results.

**The industries in which we are active are evolving rapidly, and we may be unable to keep pace with changes in technology.**

The pharmaceutical and biotechnology industries are characterized by rapid technological change. This is especially true of the data-intensive areas of such technologies. Our future success will largely depend on maintaining a competitive position in the field of drug, therapeutics and diagnostic products discovery. If we fail to keep pace with changes in technology, our business will be materially harmed. Rapid technological development may result in our products or technologies becoming obsolete. This may occur even before we recover the expenses that we incurred in connection with developing those products and technologies. Products or services offered by us could become obsolete due to the development of less expensive or more effective drug or diagnostics discovery technologies. We

may not be able to make the necessary enhancements to our technologies to compete successfully with newly emerging technologies. In addition, human genomic sequence data and software is available to the public as a result of the federally funded Human Genome Project and other projects which are engaged in the study of genes and their behavior in normal and diseased conditions. These publications, including the publication of the human genome, may make some of our products and technologies less valuable or obsolete.

**We face intense competition, and if we are unable to compete successfully, we could experience a loss of market share and reduced gross margins for our platforms, services and technologies.**

The markets for our products and services are very competitive, and we expect the competition to increase in the future. We compete with entities in the United States and elsewhere that provide products and services for the analysis of genomic information and information relating to the study of proteins (proteomic information) or that commercialize novel genes and proteins. These include genomics, pharmaceutical and biotechnology companies, academic and research institutions and government and other publicly-funded agencies. We may not be able to successfully compete with current and future competitors. Many of our competitors have substantially greater capital resources, research and development staffs, facilities, manufacturing and marketing experience, distribution channels and human resources than we do. This may allow these competitors to discover and to develop products or to obtain regulatory approval for products based on these discoveries, in advance of us or of our customers.

\_\_\_\_(4)\_\_\_\_

Greater resources may also allow these competitors to develop products that are more effective than ours or than those of our customers. Some of our competitors, especially academic and research institutions and government and other publicly funded agencies, may provide for free services or data similar to the services and data that we provide for a fee. Moreover, our competitors may obtain patent and other intellectual property protection that would limit our rights or our customers' and partners' ability to use or commercialize our discoveries, products and services. If we are unable to compete successfully against existing or potential competitors, our market share, revenues and margins may decline.

**We have allocated limited resources to our discovery activities, and we may never be able to commercialize products resulting from these activities or achieve profitability.**

Our discovery team has limited research and development personnel and limited marketing capabilities. We currently have no therapeutics or diagnostic products manufacturing capabilities. Our discovery activities have generated only negligible revenues to date, have no clear source of revenues and may never achieve profitability. Although we intend to allocate additional cash resources to our discovery activities, we do not anticipate that this funding will enable us to achieve profitability in the near future. As a result, our discovery activities may require substantial additional funds in the future. If we are unable to obtain the required additional funds for our discovery activities, whether internally or from third parties on commercially reasonable terms, we may have to curtail or cease our discovery activities.

To date, our discovery team identified a number of potential diagnostic markers and therapeutic proteins. Once developed, product candidates must undergo extensive testing, including animal and human clinical trials, to obtain regulatory approvals needed for commercialization. Even if we are able to develop and commercialize our potential product candidates, we cannot assure you that these products, or any of them, would be commercially marketable or successful.

**We may not be able to find business partners to develop and commercialize product candidates deriving from our discovery activities.**

Our strategy for the development and commercialization of diagnostic markers and therapeutic proteins depends on the formation of collaborations or licensing relationships with third parties that have complementary capabilities in relevant fields. Potential third parties include pharmaceutical and biotechnology companies, diagnostic companies, academic institutions and other entities.

We have granted two licenses for the development and commercialization of diagnostic markers or therapeutic proteins, which are in their initial stages. We cannot assure you that these collaborations and licenses will be successful. We cannot assure you that we will enter into any other collaboration in the future. If we are not able to establish successful collaborations or licenses, we may be required to undertake product development and



commercialization at our own expense. Such an undertaking may:

- limit the number of product candidates that we will be able to develop and commercialize;
- reduce the likelihood of successful product introduction;
- delay the time by which our product candidates may be developed and commercialized;
- significantly increase our capital requirements; and
- disrupt our business, distract our management and employees and increase our expenses.

As a result of the above, if we fail to enter into successful collaborations and licenses, our discovery activities and financial condition and results of operations may be materially harmed.

**Our dependence on licensing and other collaboration agreements with third parties subjects us to a number of risks.**

We may not be able to enter into licensing or other collaboration agreements on terms favorable to us. Collaborators may typically be afforded significant discretion in electing whether to pursue any of the planned activities. In most cases, our collaborators or licensees will have responsibility for formulating and implementing key strategic or operational plans. Decisions by our collaborators or licensees on these key plans, which may include development, clinical, regulatory, marketing (including pricing), inventory management and other issues, may prevent successful commercialization of the product or otherwise affect our profitability.

\_\_\_\_(5)\_\_\_\_

In addition, we may not be able to control the amount and timing of resources our collaborators devote to the product candidates, and collaborators may not perform their obligations as expected. Additionally, business combinations or changes in a collaborator's or a licensee's business strategy may negatively affect its willingness or ability to complete its obligations under the arrangement with us. Furthermore, our rights in any intellectual property or products that may result from our collaborations may depend on additional investment of money that we may not be able or willing to make.

Potential or future collaborators may pursue alternative technologies, including those of our competitors. Disputes may arise with respect to the ownership of rights to any technology or product developed with any future collaborator. Lengthy negotiations with potential collaborators or disagreements between us and our collaborators may lead to delays or termination in the research, development or commercialization of product candidates or result in time-consuming and expensive litigation or arbitration. If our collaborators pursue alternative technologies or fail to develop or commercialize successfully any product candidate to which they have obtained rights from us, our business, financial condition and results of operations may be significantly harmed.

**Our business of providing access to our platforms, tools and data to our customers and the activities of our discovery team may conflict with each other.**

Our discovery activities depend, in large part, on our computational platforms and tools and proprietary data to make inventions and establish intellectual property rights in genes and proteins. We believe that the access to our platforms, tools and proprietary information provides our discovery team with a competitive advantage over biotechnology companies that are pursuing technologies that may compete with us and that seek patent protection to gene and protein sequences in which we have an interest. When we make these platforms, tools and information available to our customers, primarily biotechnology and pharmaceutical companies, our discovery team's competitive advantage over these customers may be diminished or eliminated. If our customers, many of which have greater financial and other resources than we have, research genes or proteins that we are also researching, they may establish intellectual property rights in such genes or proteins before our discovery team does. As a result, our business, financial condition and results of operations may be significantly harmed. In addition, our discovery team may pursue opportunities in fields that could conflict with those of our customers or discourage potential customers from working with us, thereby reducing our potential revenues.

**The trend towards consolidation in the pharmaceutical and biotechnology industries may adversely affect us.**

The trend towards consolidation in the pharmaceutical and biotechnology industries may negatively affect us in several ways. These consolidations usually involve larger companies acquiring smaller companies, which results in the remaining companies having greater financial resources and technological capabilities, thus strengthening competition in the industry. In addition, continued consolidation may result in fewer customers for our products and services. Also, if one of the consolidating companies already uses the products or services of our competitors, we may lose existing customers as a result of such consolidation.

**We rely on a small number of customers for a large portion of our revenues from products and services.**

A small number of our customers account for a substantial amount of our revenues. Warner-Lambert Company, a subsidiary of Pfizer, Inc., accounted for approximately 35% of our revenues in 2000, approximately 30% of our revenues in 2001 and approximately 14% of our revenues in 2002. The U.S. Patent and Trademark Office accounted for approximately 24% of our revenues in 2000, approximately 17% of our revenues in 2001, and less than 10% of our revenues in 2002. Novartis Pharma A.G. accounted for approximately 17% of our revenues in 2001 and approximately 18% of our revenues in 2002; and diaDexus Inc. accounted for approximately 12% of our revenues in 2002. Some of these agreements have expired or will expire, unless renewed, in the near future. A loss of our significant customers, or a reduction in orders from these customers, could harm our business and financial results.

\_\_\_\_(6)\_\_\_\_

**If we are unable to hire or retain key personnel or sufficient qualified employees, we may be unable to successfully operate our business.**

Our business is highly dependent upon the continued services of our senior management and key technical personnel. While members of our senior management are parties to employment or consulting agreements and non-competition and non-disclosure agreements, we cannot assure you that these key personnel and others will not leave us or compete with us, which could materially harm our financial results and our ability to compete. We do not carry key person life insurance on any member of our senior management. Furthermore, competition for highly qualified personnel in our industry and geographic locations is intense. Our business would be seriously harmed if we were unable to retain our key employees, or to attract, integrate or retain other highly qualified personnel in the future.

**If we are unable to raise additional capital in the future, we may have to curtail or cease operations.**

Based on our current projections, we anticipate that our existing cash and cash equivalents will be sufficient to support our operations for at least the next two years. We cannot assure you, however, that we will not need to raise additional capital prior to that time or that we would be able to raise sufficient additional capital on favorable terms, if at all. If we fail to raise sufficient funds, we may have to curtail or cease operations, which would materially harm our business and financial results. If we raise additional capital by issuing equity securities, our shareholders may experience dilution. If we raise additional funds through collaboration and licensing arrangements, we may be required to relinquish some rights to our technologies or product candidates, or grant licenses on terms that are not favorable to us.

**Our operating results are likely to fluctuate and may fail to meet the expectations of the investment community, which may cause our share price to decline.**

Our quarterly operating results have fluctuated in the past and are likely to do so in the future. These fluctuations could cause our share price to fluctuate significantly. If our operating results fail to meet the expectations of the investment community, this could also cause our share price to fluctuate. Consequently these results should not be relied upon as indications of future performance and comparisons quarterly results of operations may not be meaningful. Our operating results may fluctuate as a result of:

- the timing of our receipt of payments under arrangements with our current and future customers and collaborators;
- our rate of success and timing of new collaborations and sales of our products, services and discoveries;
- changes in demand for our existing products and services;
- a drop in the financial resources available to our customers;
- changes to our fee structure imposed by market constraints, or to our operating expenses;

- product quality problems;
- increased competition and the timing of the release of products and data by our competitors and academic and other non-profit organizations;
- inflation in Israel or changes in the conversion rate of Israeli currency (New Israeli Shekel);
- fluctuations in the sales activities of our distributors; and
- the outcome of conflicts in the Middle East.

**We may acquire or make strategic investments in other businesses and technologies in the future, and these could prove difficult to integrate, disrupt our business, dilute stockholder value and adversely affect our operating results.**

We have not made acquisitions of other companies or businesses in the past and currently have no commitments or agreements with respect to future acquisitions. However, if opportunities arise, we may consider making future acquisitions of businesses, technologies, services or products. Moreover, even if we acquire complementary businesses or technologies, we may be unable to successfully integrate any additional personnel, operations or acquired technologies into our business. Difficulties in integrating an acquired business could disrupt our business, distract our management and employees and increase our expenses. In addition, if we make acquisitions using convertible debt or equity securities, existing stockholders may be diluted, which could affect the market price of our stock.

\_\_\_\_(7)\_\_\_\_

**If our access to tissue samples or to genomic data or other information is restricted, or if this data is faulty, our business may suffer.**

To continue to build our technologies and related products and services, we need access to third parties' scientific and other data and information. We also need access to normal and diseased human and other tissue samples and other biological materials. We may not be able to obtain or maintain such access on commercially acceptable terms. Some of our suppliers could become our competitors and discontinue selling supplies to us. Information and data from these suppliers could also contain errors or defects that could corrupt our databases or the results of our analysis of the information and data. In addition, government regulation in the United States and other countries could result in restricted access to, or use of, human and other tissue samples. Although currently we do not face significant problems in obtaining access to tissues, if we lose access to sufficient numbers or sources of tissue samples, or if tighter restrictions are imposed on our use of the information generated from tissue samples, our business may suffer.

**Our business and the products developed by our collaborators and licensees may be subject to governmental regulation.**

Any new therapy or diagnostic product that may be developed by us, by our collaborators, or by our licensees will have to undergo a lengthy and expensive regulatory review process in the United States and other countries before it can be marketed. It may be several years, or longer, before any therapy or diagnostic product that we develop by using our technologies, will be sold or will provide us with any revenues. This may delay or prevent us from becoming profitable. Changes in policies of regulatory bodies in the United States and in other countries could increase the delay for each new therapy and diagnostic product. Even if regulatory approval is obtained, a product on the market and its manufacturer are subject to continuing review. Discovery of previously unknown problems with a product may result in withdrawal of the product from the market.

We have not yet applied for or received regulatory approval for any therapeutic, diagnostic or other product resulting from the use of our products or services or from our discovery activities. Although we intend to become involved in the clinical phases in the future, we still expect to rely mainly on collaborators or licensees of our discovery activities to file these applications and generally direct the regulatory review process. We cannot be certain whether our collaborators or licensees will be able to obtain marketing clearance for any product that may be developed on a timely basis, if at all. If our collaborators or licensees fail to obtain required governmental clearances, it will prevent them from marketing therapeutic or diagnostic products until clearance can be obtained, if at all. This will in turn reduce our chances of receiving various forms of payments, including those relating to sales of marketed therapeutic or diagnostic products by our collaborators or licensees.

**If ethical and other concerns surrounding the use of genetic information become widespread, there may be less demand for our products and services.**

Genetic testing has raised ethical issues regarding confidentiality and the appropriate uses of the resulting information. For these reasons, governmental authorities may call for limits on or regulation of the use of genetic testing or prohibit testing for genetic predisposition to various conditions, particularly for those that have no known cure. Any of these scenarios could reduce the potential markets for our technologies in the field of predictive drug response, which could materially harm our business and financial results.

**The sales cycle for some of our products and services is lengthy. We expend substantial funds and management effort with no assurance of successfully selling our products or services.**

Our ability to obtain customers for our platforms, tools and services depends in large upon the perception that our technologies can help accelerate their efforts in drug and diagnostics discovery. Our ability to obtain customers for our therapeutic or diagnostic product candidates significantly depends on our ability to validate and prove that each such product candidate is suitable for our claimed therapeutic or diagnostic purposes. Our ability to obtain customers will also depend on our ability to successfully negotiate terms and conditions for such arrangements. The sales cycle for our therapeutic and diagnostic product candidates is typically lengthy and may take more than 12 months.

\_\_\_\_(8)\_\_\_\_

The sales cycle for some of our platforms, tools and services may also take 12 months or longer. Our sales effort may require the effective demonstration of the benefits of our products and services to, and significant training of, many different departments within a potential customer. These departments may include key management personnel. In addition, we are often required to negotiate agreements containing terms unique to each customer. Therefore, we expend and will need to continue expending substantial funds and management effort with no assurance that we will be successful in reaching agreements with potential customers.

**We may be subject to product liability claims if our products, or products derived from our products or services, harm people.**

We may be held liable if any product we develop, or any product that is made with the use, or incorporation of, any of our technologies or data causes harm or is found otherwise unsuitable. These risks are inherent in the development of genomics, functional genomics and pharmaceutical products. If we are sued for any harm or injury caused by products derived from our services or products, our liability could exceed our total assets. In addition, such claims could cause us to incur substantial costs and subject us to negative publicity even if we prevail in our defense of such claims.

**Our business is dependent on the continuous, reliable and secure operation of our computational tools and platforms. If we are unable to safeguard the integrity, security and privacy of our data or our customers' data, our revenue may decline, our business could be disrupted, and we may be sued.**

We have implemented and maintain physical and software security measures to preserve and protect our computer and communications hardware and software as well as our data and our customers' data. These measures are intended to protect against loss, corruption and misappropriation caused by system failures or unauthorized access. However, these methods cannot protect us against fire, storm, flood, power loss, earthquakes, telecommunications failures, physical or software break-ins and similar events. In addition, our database products are complex and sophisticated and could contain erroneous data, design defects or software errors that could be difficult to detect and correct. Software errors and viruses may be found in current products or any future products that we develop. If we fail to maintain and further develop the necessary data to support our customers' data discovery efforts, it could result in a loss of or delay in our revenues and market acceptance and exposure.

We have also taken security measures to protect our proprietary databases and have entered into confidentiality agreements with employees, customers and collaborators who have access to our confidential or proprietary information. However, these measures may not be sufficient to prevent unauthorized access, use or publication of our proprietary data. A party who is able to circumvent our security measures could misappropriate or destroy proprietary information or cause interruptions in our operations. In addition, a party who obtains unauthorized access to our proprietary data or breaches a confidentiality agreement with us could publish large portions or all of our proprietary data. Such publication of our proprietary data could make some of our products less valuable or obsolete, thereby seriously harming our financial condition. We also could be subject to liability claims by customers or our collaborators who have submitted their data to us for analysis.



We may be required to bear significant expenditures on an on-going basis to protect against system failures or security breaches or to alleviate problems caused by any failures or breaches. Any failure that causes the loss or corruption of, or unauthorized access to, our or our customers` data could reduce customer satisfaction, expose us to liability and, if significant, could cause our revenue to decline or our entire business to cease.

**Any inability to protect our proprietary data, technologies or products could harm our competitive position.**

If we do not adequately protect the intellectual property underlying our products and services, competitors may be able to develop and market the same or similar products and services. This would erode our competitive advantage. The laws of some countries do not protect or enable the enforcement of intellectual property to the same extent as the laws of the U.S.

\_\_\_\_(9)\_\_\_\_

We use contractual obligations to protect a significant portion of our confidential and proprietary information and know-how. This includes a substantial portion of the knowledge base from which we develop a large portion of our proprietary products and services. However, these measures may not provide adequate protection for our trade secrets or other proprietary information and know-how. Customers, employees, scientific advisors, collaborators or consultants may still disclose our proprietary information in violation of their agreements with us, and we may not be able to meaningfully protect our trade secrets against this disclosure.

In addition, we have applied for patents covering some aspects of some of our technologies and predicted genes and proteins we have discovered using these technologies. To date, we have been granted one patent for one of our discoveries. We plan to continue to apply for patents covering parts of our technologies and discoveries as we deem appropriate, but cannot assure you that we will be able to obtain any patents. The patent positions of biotechnology companies, including Compugen, are generally uncertain and involve complex legal and factual questions. Legislative changes and/or changes in the examination guidelines of governmental patents offices may negatively affect our ability to obtain patent protection for certain aspects of our intellectual property, especially with respect to genetic discoveries.

**Our success depends in large part on our ability to patent our discoveries.**

The success of our discovery activities depends, in large part, on our ability to obtain patents on genes and proteins that we have discovered and are attempting to commercialize. We face intense competition from other biotechnology and pharmaceutical companies. These include customers who use our products and technologies and are pursuing patent protection for discoveries, which may be similar or identical to our discoveries. We cannot assure you that other parties have not sought patent protection relating to the genes and proteins that we discovered or may discover in the future. Our patent applications may conflict with prior applications of third parties or with prior publications. They may not result in issued patents and, even if issued, our patents could be invalidated or may not be sufficiently broad to provide us with any competitive advantages. U.S. and other patent applications ordinarily remain confidential for 18 months from the date of filing. As a result, patent applications that we file which we believe are novel at the time of filing, may be determined at a later stage to be inconsistent with earlier applications. Any of these events could materially harm our business or financial results.

**Litigation or other proceedings or third party claims of intellectual property infringement could prevent us, or our customers or collaborators, from using our discoveries or require us to spend time and money or modify our operations.**

If we infringe patents or proprietary rights of third parties, or breach licenses that we have entered into with regard to our technologies and products, we could experience serious harm. If litigation is commenced against us for intellectual property rights infringement, we may incur significant costs in litigating, whether or not we prevail in such litigation. These costs would also include diversion of management and technical personnel to defend ourselves against third parties or to enforce our patents (once issued) or other rights against others. In addition, parties making claims against

us may be able to obtain injunctive or other equitable relief that could prevent us from being able to further develop or commercialize. This could also result in the award of substantial damages against us. In the event of a successful claim of infringement against us, we may be required to pay damages and obtain one or more licenses from third parties. If we are not able to obtain these licenses at a reasonable cost, if at all, we could encounter delays in product introductions while we attempt to develop alternative methods or products. Defense of any lawsuit or failure to obtain any of these licenses could prevent us from commercializing available products.

**Any claims related to the hazardous chemicals and radioactive and biological materials we use in our business could be time consuming and costly.**

Our research and development processes involve the controlled use of hazardous materials, including chemicals, radioactive and biological materials. To our knowledge, our work is performed in accordance with applicable environmental regulations. However, we cannot eliminate the risk of accidental contamination or discharge and any harm from these materials. We could be subject to civil damages and criminal penalties in the event of improper or unauthorized release of, or exposure of individuals to, hazardous materials. In addition, claimants may sue us for harm or contamination that results from our use or the use by third parties (including our collaborators) of these materials, and our liability may exceed our insurance coverage or even our total assets. We could be held responsible for any injury caused to persons or property by exposure to, or release of, these hazardous materials.

\_\_\_\_(10)\_\_\_\_

**Our chemistry operation is in its early research and development stage. We may never be able to validate the technology that we are developing, and even if validated, we may never be able to commercialize it.**

Our chemistry operation is in its early research and development stage. We consider it a high-risk operation in that it consumes significant resources and funds but is uncertain of success. Although substantial progress has been made since the initiation of this activity approximately three years ago, the underlying scientific rationale has not yet been fully validated. We do not know whether the underlying technology will ever be validated and, if validated, whether we will be able to commercialize this technology.

### ***Risks Related to our Ordinary Shares***

**Holders of our ordinary shares who are United States residents face income tax risks.**

There is a significant risk that we will be classified as a passive foreign investment company, or PFIC. Our treatment as a PFIC could result in a reduction in the after-tax return to the holders of our ordinary shares and may cause a reduction in the value of these shares. For U.S. Federal income tax purposes, we will be classified as a PFIC for any taxable year in which either (i) 75% or more of our gross income is passive income, or (ii) at least 50% of the average value of all of our assets for the taxable year produce or are held for the production of passive income. For this purpose, passive income includes dividends, interest, royalties, rents, annuities and the excess of gains over losses from the disposition of assets that produce passive income. If we were determined to be a PFIC for U.S. federal income tax purposes, highly complex rules would apply to U.S. taxpayers owning our ordinary shares. Accordingly, you are urged to consult your tax advisors regarding the application of these rules.

As a result of our substantial cash position and the decline in the value of our stock in 2002, there is a significant risk that we will be classified as a PFIC under the asset test described in the preceding paragraph. In addition, there can be no assurance that we will not be classified as a PFIC in the future, because the determination of whether we are a PFIC is based upon the composition of our income and assets from time to time, and such determination cannot be made with certainty until the end of a calendar year.

United States residents should carefully read "Taxation, United States Federal Income Tax Consequences" under "Item 10. Additional Information" for a more complete discussion of the U.S. federal income tax risks related to owning and disposing of our ordinary shares.

**Our business is difficult to evaluate because we have a limited history of operations.**

Since our incorporation in 1993, our research focus, the products we developed and our business model have been continually evolving. In addition, since 1998, part of our business has involved the research and development of therapeutic products and diagnostic markers. These products are typically developed over a period of approximately 12 years and 5 years respectively. For these reasons, we have a history of operations in which there is insufficient information to identify any historical pattern. Even if we could discern such a pattern, the rapidly evolving nature of the biotechnology and pharmaceutical industries would make it very difficult to identify any meaningful information in such a history. Therefore, it is also be difficult to make any projections about the future of our operations. This difficulty may result in our ordinary shares trading below their value.

**Our share price has been volatile and is likely to be volatile in the future.**

The market price of our ordinary shares has been highly volatile and is likely to continue to be highly volatile. This is due to the risks and uncertainties described in this annual report, as well as other factors, including:

- . conditions in the economy or in life science-related industries;
- . actual or anticipated fluctuations in our operating results;
- . changes in expectations as to our future financial performance or changes in financial estimates by the investment community;
- . technological innovations by us or our competitors;
- . investors' perceptions or changes in market valuation of life science companies generally; and
- . the operating and share price performance of other comparable companies.

In addition, due to the downturn in the world economy over the past few years and geo-political events, the equity markets in general have experienced a down turn and increased volatility. This has particularly affected the share market prices of many publicly listed high-technology and biotechnology companies. The market prices of equity securities of companies that have a significant presence in Israel may also be affected by the security situation in the Middle East and particularly in Israel. As a result these companies may experience difficulties in raising additional financing required to effectively operate and grow their businesses. Such failure and the volatility of the securities market in general, and our share price in particular, may affect our ability to raise additional financing in the future. Market and industry fluctuations may adversely affect the trading price of our ordinary shares, regardless of our actual operating performance. In the past, following periods of volatility in the market price of some companies' securities, securities class action litigation has been brought against them. We do not know of any reason why such litigation would be brought against us. Nevertheless, we could become involved in this type of litigation in the future. Litigation of this type is often very expensive and diverts management attention and resources.

**Future sales of our ordinary shares may depress our share price.**

A substantial number of our ordinary shares could be sold in the public market. The occurrence of these sales, or the perception that these sales could occur, could materially and adversely affect our share price or could impair our ability to obtain capital through future offerings of equity securities. As of April 30, 2003, we had outstanding 26,182,260 ordinary shares. In addition, as of April 30, 2003, options to purchase 4,688,167 of our ordinary shares were outstanding, of which 2,880,804 were exercisable. In addition, as of April 30, 2003, there were 35,000 ordinary shares issuable upon the exercise of outstanding warrants, all of which are exercisable.

**The trading volume of our shares has been low in the past and may be low in the future, resulting in lower than expected market prices for our shares.**

Our shares have been traded at low volumes in the past and may be traded at low volumes in the future for reasons related or unrelated to our performance. This low trading volume may result in market price for our ordinary shares that are below their value.

**Our cash reserves have exceeded our quoted market value. If this occurs again we may become an attractive target for takeover attempts by third parties that are interested in those cash reserves.**

Our cash reserves have been greater than our quoted market value. If this situation reoccurs, we may become an attractive target for third parties that wish to take control over our cash reserves. This situation would make us more likely to become a target for hostile takeover attempts. However, we believe that the limitations and requirements imposed by the Israeli law on takeovers, will make it very difficult for third parties to succeed in a hostile take over.

**Provisions of Israeli law may delay, prevent or affect a potential acquisition of all or a significant portion of our shares or assets and therefore depress the price of our stock.**

Israeli corporate law regulates acquisitions of shares through tender offers. It requires special approvals for transactions involving significant shareholders and regulates other matters that may be relevant to these types of transactions. The provisions of Israeli law may delay or prevent an acquisition, or make it less desirable to a potential acquirer and therefore depress the price of our shares. For information about these limitations, see "Anti-Takeover Provisions under Israeli Law" Under "Item 10. Additional Information". Furthermore, Israeli tax considerations may make potential transactions undesirable to us or to some of our shareholders.

**Some of our existing shareholders can exert control over us and may not make decisions that are in the best interests of all shareholders.**

As of April 30, 2003, officers, directors and shareholders holding more than 5% of our outstanding shares collectively controlled approximately 23% of our outstanding ordinary shares. As a result, these shareholders, if they act together, would be able to exert a significant degree of influence over our management and affairs and over matters requiring shareholder approval, including the election of directors and approval of significant corporate transactions. Accordingly, this concentration of ownership may harm the market price of our ordinary shares by delaying or preventing a change in control of us, even if a change is in the best interests of our other shareholders.

\_\_\_\_(12)\_\_\_\_

In addition, the interests of this concentration of ownership may not always coincide with our interests or the interests of other shareholders, and accordingly, they could cause us to enter into transactions or agreements that we would not otherwise consider.

**Our ordinary shares are traded on more than one market and this may result in price variations.**

Our ordinary shares are traded primarily on the Nasdaq National Market and on the Tel Aviv Stock Exchange. Trading in our ordinary shares on these markets is made in different currencies (U.S. dollars on the Nasdaq National Market, and New Israeli Shekels on the Tel Aviv Stock Exchange), and at different times (resulting from different time zones, different trading days and different public holidays in the United States and Israel). Consequently, the trading prices of our ordinary shares on these two markets often differ. Any decrease in the trading price of our ordinary shares on one of these markets could cause a decrease in the trading price of our ordinary shares on the other market.

***Risks Relating to Operations in Israel***

**Conditions in the Middle East and in Israel may harm our ability to produce and sell our products and services.**

Our principal offices and research and development facilities and many of our suppliers are located in Israel. Political, economic and military conditions in Israel directly affect our operations. Since the establishment of the State of Israel in 1948, a number of armed conflicts have taken place between Israel and its Arab neighbors, as well as incidents of civil unrest, military and terrorist actions. A state of hostility, varying in degree and intensity, has led to security and economic problems for Israel. There has been a significant increase in violence since September 2000, which has continued with varying levels of severity through to the present. While certain parties with whom we do business have declined to visit our facilities in Israel during periods of heightened unrest or tension, we have made alternative arrangements when required and we do not believe that the political and security situation has had any material adverse impact on our business. The political and security situation in Israel may result in certain Israeli parties with whom we have contracts claiming that they are not obligated to perform their commitments under those agreements pursuant to "force majeure" provisions. Any hostilities involving Israel or the interruption or curtailment of trade between Israel and its present trading partners could adversely affect our operations and could make it more difficult for us to raise capital. Furthermore, since we do not have a detailed disaster recovery plan that would allow us to quickly resume business activity in the event of a major interruption, we could experience serious disruptions as a result of events associated with the Israeli-Palestinian conflict or any war in the Middle East, resulting in any serious damage to our facilities. Our business interruption insurance may not adequately compensate us for losses that may occur. Any losses or damages incurred by us could have a material adverse effect on our business. Any future armed conflicts or political instability in the region would likely negatively affect business conditions and could harm our results of operations.



In addition, in the past Israel and companies doing business with Israel have been subjected to an economic boycott. Several countries still restrict business with Israel and Israeli companies. These restrictive laws and policies may have an adverse impact on our operating results, financial condition or the expansion of our business.

**Our results of operations may be negatively affected by the obligation of key personnel to perform military service.**

Some of our executive officers and employees are obligated to perform military reserve duty and are subject to being called to active duty for extended periods of time under emergency conditions. To date, any calls to active duty have not affected us materially. However, it is possible that there will be additional call-ups in the future which may have a more material effect on us. The absence of one or more of our executive officers or key employees due to military service could disrupt our operations. Any disruption in our operations may have an adverse impact on our business.

\_\_\_\_(13)\_\_\_\_

**Because a substantial portion of our revenues are generated in U.S. dollars, while a significant portion of our expenses are incurred in New Israeli Shekels, our results of operations may be adversely affected by inflation and currency fluctuations.**

We generate a substantial portion of our revenues in U.S. dollars but incur a significant portion of our expenses, principally salaries and related personnel expenses, in New Israeli Shekels, commonly referred to as NIS. As a result, we are exposed to the risk that the rate of inflation in Israel will exceed the rate of devaluation of the NIS in relation to the dollar or that the timing of any devaluation may lag behind inflation in Israel. While in recent years the rate of devaluation of the NIS against the dollar has exceeded the rate of inflation, we cannot be sure that this trend will continue. If the dollar cost of our operations in Israel increases, our dollar-measured results of operations will be adversely affected. Our operations also could be adversely affected if we are unable to guard against currency fluctuations in the future. Accordingly, we may enter into currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the dollar against the NIS. These measures, however, may not adequately protect us from material adverse effects due to the impact of inflation in Israel.

**The government programs from which we currently receive benefits require us to meet various conditions. The termination or reduction of these programs in the future would negatively impact our revenues from grants or increase our costs or taxes.**

We currently receive research and development grants and are entitled to certain grants and tax benefits under Israeli government programs, particularly as a result of the "approved enterprise" status of our existing facilities in Israel and research and development programs funded by Office of Chief Scientist of the Israeli Ministry of Industry and Trade. To maintain our eligibility for some of these programs and tax benefits, we must continue to meet conditions, including making specified investments in fixed assets and financing a percentage of investments with share capital. In addition, we must continue to file periodic reports and pay royalties with respect to some of the grants received. If we fail to meet such conditions, we will become ineligible for such grants and tax benefits and could be required to return all or part of the benefits received. We cannot assure you that we will continue to receive grants at the same rate, if at all. In addition, some of these programs restrict our ability to manufacture particular products or transfer particular technologies outside of Israel. See "Item 5. Operating and Financial Review and Prospects-Government of Israel Support Programs." From time to time, we submit requests for additional research and development grants and expansions of our approved enterprise programs or for new programs. These requests might not be approved. The termination or reduction of these programs and tax benefits could have a material adverse effect on our business, financial condition and results of operations. If these programs or tax benefits are terminated or reduced, we could lose a significant source of income or be required to pay increased taxes in the future, which could decrease our profits.

Israeli law and regulations prescribe an expiry date for the grant of new benefits. The expiry date has been extended several times in the past. The last expiry date that was in effect was in May 2003, and no new benefits will be granted after that date unless the expiry date is again extended. A government committee is reviewing the benefits program under the law. There can be no assurance that new benefits will be available after May 2003, however benefits already

granted will stay in effect throughout the plan period.

**Terrorist attacks that occurred in New York and Washington on September 11, 2001, the war in Iraq and other acts of violence or war may materially affect the markets on which our securities trade, the markets in which we operate, our operations and profitability.**

In the aftermath of the September 11, 2001 terrorist attacks on the United States, the United States-led coalition of nations commenced a series of retaliatory military strikes in Afghanistan upon strategic installations of the Taliban regime, and governmental intelligence authorities issue from time to time warnings of the imminent threat of further attacks against civilian and military installations. In addition, the U.S. and the United Kingdom together with certain coalition nations, lead a military campaign to topple the regime of Saddam Hussein in Iraq. These attacks and armed conflicts, as well as the uncertainty surrounding these issues, have had, and we expect will continue for the unforeseeable future to have, an adverse effect on the global economy generally, and the biotechnology industry in particular.

\_\_\_\_(14)\_\_\_\_

**It may be difficult to enforce a U.S. judgment against us, or our officers and directors to assert U.S. securities law claims in Israel.**

Service of process upon Compugen, which is incorporated in Israel, and upon our directors and officers and our Israeli auditors, almost all of whom reside outside the United States, may be difficult to obtain within the United States. In addition, because substantially all of our assets and almost all of our directors and officers are located outside the United States, any judgment obtained in the United States against us or any of our directors and officers may not be collectible within the United States.

\_\_\_\_(15)\_\_\_\_

## ITEM 4. INFORMATION ON THE COMPANY

### History and Development of the Company

Our legal and commercial name is Compugen Ltd. We were established under the laws of the State of Israel in 1993. Our principal office premises are located at 72 Pinchas Rosen Street, Tel Aviv 69512, Israel, and our telephone number is +972-3-765-8585. The principal office premises of Compugen, Inc., our U.S. subsidiary, are located at 7 Centre Drive, Jamesburg, New Jersey 08831, and its telephone number is (609) 655-5105. Our primary Internet address is [www.cgen.com](http://www.cgen.com). None of the information on our websites is incorporated by reference into this annual report.

Our mission is to increase the probability of success of drug and diagnostic product development by incorporating ideas and methods from mathematics, computer science and physics into the disciplines of biology, organic chemistry and medicine. To accomplish our mission, we are active in the three scientific fields underlying the drug development process. These fields are biology, chemistry and medicine. This unique capability is the basis for both in-house discovery of potential therapeutic and diagnostic products, and for the development of high value platforms, tools and services for our customers.

We initially directed our technologies towards developing computer hardware systems and software applications to accelerate searches for:

- (a) similarity in genetic structure between different organisms, and/or genes -(such similarity is also known as "homology");
- (b) sequences of nucleotides, which are components both of the genetic material, DNA, and of RNA (which is a molecule related to and deriving from the transcription of DNA); and
- (c) protein sequence databases.

This system and those applications are commercialized under the name "Bioccelerators".

Since 1997, a significant portion of our activities have been directed to the development of technologies that allow molecular biologists to obtain significantly more information and more valuable information from genomic databases and from databases of nucleotide sequences that encode for the expression of protein sequences (referred to as "expressed sequences", "expressed sequence tags" or "EST"s) through the analysis and modeling of the underlying biological phenomena and processes and by accounting for errors inherently generated during the process of constructing such databases. An important aspect of these technologies is the analysis and rearrangement (also known as clustering and assembly) of genomic and expressed sequence data in order to provide information that can lead to the discovery of new genes and proteins and the annotation of genes and proteins. This clustering and assembly

technology, when applied to publicly available database information, can lead and has led to our discovery of novel genes and novel proteins. Some of these discoveries have been discoveries of "splice variants". Splice variants are formed from the alternative splicing of a section of mRNA, before the latter expresses a protein. Such splicing accounts for the expression of more than one protein from the same gene.

We have also developed solutions for challenges in the fields of functional genomics and proteomics. In the field of functional genomics, we are active in improving the design of probes. Probes are short nucleotide sequences that are designed to be unique and, representative of much larger corresponding genes. Probes which we design can be used for gene expression experiments - experiments that identify the RNA (and, thereby, corresponding genes) that express proteins in certain tissues and/or physiological conditions. While important advances have been made in gene expression technologies, we believe that the current usefulness of some of the devices used for gene expression analysis can be significantly enhanced by better probe design. We are applying our clustering and assembly technologies to develop more efficient probe design and data analysis for gene expression.

Additionally, we have applied our technologies in the area of proteomics. A common problem for scientists in this area is the need to separate individual proteins from the thousands included in a test sample and then to identify the known and unknown proteins. Our scientists have created advanced computational techniques to analyze pattern recognition and image processing to seek to overcome these difficult problems.

\_\_\_\_(16)\_\_\_\_

Since 1997, our multi-disciplinary team of mathematicians, computer scientists, physicists, chemists, physicians and molecular biologists has developed and continues to develop technologies for:

- analyzing and modeling molecular biology phenomena;
- accelerating the analysis of data relating to the genetic material of organisms (genomic data), the functions of genes and their behavior in normal and diseased conditions (functional genomics), and proteins (proteomic data);
- creating user-friendly applications that allow scientists in the field of genomics, functional genomics and proteomics to quickly obtain results from their queries using our modeling and analytical tools;
- discovering potential therapeutic proteins and diagnostic markers;
- designing small molecules for the discovery of drug candidates;
- analyzing medical and clinical data for the purpose of developing predictive drug response models; and
- providing value added information (including annotations) to already existing information.

We apply the above technologies in the areas of biology, chemistry and medicine, which are the three scientific areas underlying the drug development process.

In the area of biology, we develop and commercialize platforms and tools that enable and enhance the discovery and functional analysis of genes, proteins and cell processes. Our platforms and tools include: LEADS, Genecarta, Oligo design (being the design of short nucleotide sequences, also known as "oligonucleotides"), OligoLibraries, Z3 and Z4000.

During the past two years we have expanded our activities in the field of protein discovery by using our proprietary tools and by focusing on therapeutic proteins (drugs which are actually proteins) and diagnostic markers (tools which indicate the presence or absence of a physiological condition, such as a disease). We discover and seek to commercialize potential therapeutic proteins and diagnostic markers, by pursuing commercial relationships with leading biotechnology, diagnostic and pharmaceutical companies.

In the area of chemistry we are developing a unique technology for discovering small molecule drugs.

In the area of medicine we are developing predictive models for drug response, in an effort to improve the effectiveness of drugs, to enhance safety in drug usage and to improve the design of clinical trials.

## **Business Overview**

As stated above, our mission is to increase the probability of success of drug and diagnostic product development, by incorporating ideas and methods from mathematics, computer science and physics into the disciplines of biology,

organic chemistry and medicine. This unique capability is the basis for both in-house discovery of potential therapeutic and diagnostic products, and for the development of high value platforms, tools and services for our customers. In order to understand the importance of this mission, it is helpful to understand how drugs are discovered.

### ***Current Challenges in Pharmaceutical Research and Development***

#### ***Background***

*Gene-Based Drug Discovery* - The process of gene-based drug discovery is very complex. The first step may involve identifying a gene that codes for a specific protein. Proteins play a range of biological roles. For instance, by increasing or decreasing the amount of a protein or by activating or inhibiting its activity, a disease may be prevented, treated or cured. In such circumstances, the protein may be a target for a drug, and is known as a "drug target". Scientists try to find a drug that binds to the protein and intervenes and/or alters its function and/or activity (known as a "drug candidate"), thereby possibly preventing, treating or curing a disease. Drug candidates may be identified by testing, or "screening", hundreds of thousands of chemical compounds against a selected drug target.

\_\_\_\_(17)\_\_\_\_



This is a trial and error method for discovering a drug (also known as "high throughput screening"). Such trial and error methods typically involve very large amounts of chemical compounds. When one or more of these compounds is found to interact with the drug target and to produce a desired effect, similar compounds may be synthesized in an attempt to identify a compound with an increased desired effect. This process is known as "lead optimization" and results in a "drug candidate". If and once a drug candidate is identified, drug candidate undergoes safety and suitability tests relevant for human use.

In some cases, the protein itself may be a drug. A familiar example of such a drug is insulin. This category of proteins is referred to as "therapeutic proteins", because use or administration of the protein itself may have the desired effect of preventing, treating or curing a disease. In the case of therapeutic proteins, it is not necessary to perform screening against a drug target because the protein in such circumstances is the drug rather than the drug target. However, therapeutic proteins must undergo tests for safety and efficacy, including clinical trials.

*Diagnostic Markers* - Another aspect of the pharmaceutical (and biotechnological) research and development is the identification of diseases and a range of other physiological conditions. The presence or absence of proteins or other molecules or changing quantities of proteins or other molecules, may give information about the presence or absence a disease or of the particular stage of a disease or other physiological condition of the body. A molecule that provides this information is known as a diagnostic marker. For example, the presence or unusually increased presence of a certain protein in blood may indicate the presence of a cancerous condition. In order to develop a diagnostic marker it is first necessary to identify a correlation between, on the one hand the presence or absence or the quantity of a marker or its increased or decreased presence and, on the other hand, a disease or other physiological condition. Once such a correlation is identified, it is then necessary to develop a means of recognizing the correlation. The task of developing a method of recognition which is easy to perform, safe and inexpensive is a challenge faced by the pharmaceutical and biotechnological industry.

### *Challenges*

One of the critical challenges currently facing the pharmaceutical industry is the length of time and expense of the drug discovery and development process. Typically, ten to twelve years elapse from the time research begins to the time a drug can reach the market. This process is expensive, on average costing about \$800 million per drug (which accounts for the development of drugs that do not reach the market), and involves a very high degree of risk due to the unpredictable nature of the drug discovering and development process. Only one to four percent of the projects initiated by pharmaceutical companies actually result in marketed medicines. Many problems may arise during the discovery and development process. For instance, a potential drug may be found to be toxic or otherwise unsafe, and/or it may not have the intended effect. Since the biology of many diseases is still unknown, the pharmaceutical industry encounters many difficulties in finding drugs. Many if not most drugs are discovered by trial and error.

A range of diseases may be triggered by or associated with changes in the concentration or level of activity of certain proteins. Therefore, treatments for such diseases may involve drugs that interact with the relevant proteins. Such drugs

are often discovered by trial and error. By identifying the proteins associated with a disease and/or the genes that code for such proteins and by understanding their respective functions, it may be possible to understand the biological process involved in the corresponding disease and to scientifically discover a therapeutic drug in a focused and methodical manner, rather than by trial and error.

*Our Approach to Addressing the Challenges*

There is more and more pressure in the pharmaceutical industry to discover and develop effective and cost effective drugs and diagnostic products, even though the process is long, risky and expensive and often relies on trial and error. Our mission is to increase the probability of success of drug and diagnostic products development by incorporating ideas and methods from mathematics, computer science and physics into the disciplines of biology, organic chemistry and medicine. By using our expertise in a range of disciplines, which were previously generally not combined, we have begun to gain an insight into the underlying biology of diseases and have been able to identify genes and proteins and other molecules within the body that may play a crucial part in diseases, their prevention, treatment and/or cure. Our strategy and our core competence involve the use of the exact and computational sciences to do this in combination with traditional "wet" experimentation done in a laboratory.

\_\_\_\_(18)\_\_\_\_

We methodically analyze the very large amounts of genomic information discovered through public research, such as the Human Genome Project, as well as privately-generated information. We use mathematical models to analyze and predict structures and processes within the human cells and tissues. We believe that our increasing understanding of the workings of some biological processes within the body will make drug discovery and development a shorter and more efficient process, less prone to failure and less expensive.

We believe that understanding the functions of genes and their behavior in normal and diseased conditions, a science called "functional genomics", and the role played by proteins, a science called "proteomics", will lead to an improved understanding of the biology of diseases. We believe that this will lead to better research capabilities and to more efficient and effective development of drugs and diagnostic products. In order to do this, it is necessary to find a way to analyze the very large amounts of complex genomic and functional genomic data that have become publicly available in recent years, and to extract the data, which is vital to understanding specific diseases.

A key part of our mission is to make this research and development easier through the use of our technologies. These technologies can assist life science researchers in understanding and harnessing genomic and proteomic data. In addition, our technologies may assist researchers in developing more systematic methods to discover and predict drug responses by converting genomic information into knowledge about a particular gene, disease or drug. Our mission, in other words, is to take some of the "trial and error" out of the drug discovery process.

### *Explanation of the Biological Processes*

The characteristics of all living organisms are determined by DNA, a molecule found in most living cells. DNA is comprised of pairs of four types of small chemical units, each called a nucleotide. DNA contains genes, which in general are comprised of thousands of nucleotides. The Human Genome Project, an international research program designed to construct detailed genetic maps of the human genome (that is, all of the genetic information contained in the human genes), demonstrated that the human genome consists of a total of approximately three and a half billion nucleotides and contains at least 30,000 genes.

Cells carry out most of their biological functions by means of genetic instructions encoded in DNA. These codes govern the production of proteins through a process known as gene expression. During gene expression, the nucleotides in a gene are first copied into a related molecule called messenger RNA, or mRNA. This mRNA then instructs the cell to produce a protein. Proteins are the molecules that regulate or perform most of the physiological functions of the body. The sequence of nucleotides determines which protein out of a very large number of possible proteins is produced. Because the sequence of nucleotides in each gene is different, each gene directs the production of a different protein or proteins. Identifying these proteins is made even more difficult because of a phenomenon called alternative splicing. This is a natural process by which a single gene may, under different circumstances or at the same time, express a number of different proteins.

Many human diseases are associated with the inadequate or inappropriate presence, production or performance of proteins. For this reason, genomics, functional genomics and proteomics can assist pharmaceutical and biotechnology companies in developing diagnostic products, therapies and drugs that will interact with a targeted protein involved in disease. Drug therapies currently on the market address several hundred specific protein targets. However, we believe that as the functions of additional proteins are better understood, hundreds or thousands of additional potential drug targets will be identified. As additional progress is achieved in genomics, functional genomics and proteomics research, new drugs, diagnostic markers and therapies may be developed to diagnose, and ultimately to cure disease, rather than just treat the symptoms.

### **Challenges in Converting DNA Sequence Data into Useful Information**

In recent years, public and private endeavors, including the Human Genome Project, have created vast amounts of raw genomic and related data at an increasing rate. These efforts led to the publication of the final draft of the human genome in April of 2003 and to the publication of the genome of mouse, rat and other organisms during 2002. Although these sets of data contain information that provides scientists with important insights and knowledge about molecular biological processes, the data are very difficult to analyze. This difficulty is due to many factors, including the complexity of underlying biological processes, the limitations of existing laboratory devices, and the enormous quantity of raw data with a high rate of errors and inaccuracies.

\_\_\_\_(19)\_\_\_\_

Although new data are constantly being created at an increasing rate, we believe that a substantial amount of the useful information contained in the data that already exists, has yet to be extracted.

The primary tool used to understand this data still consist of experimental techniques performed in the laboratory. However, scientists are now applying to life sciences more and more techniques from the exact and computational sciences. In these techniques, progress is achieved through the quantitative analysis of vast amounts of data and the use of mathematical models to predict structures and processes in the fields of biology, chemistry and medicine. We believe that the use of techniques from the exact sciences has the potential to significantly improve the research and development processes in the pharmaceutical industry.

The following are some of the most important challenges in making use of this new biological data:

*Computational Challenge: Vast Amounts of Data:* Public databases today contain millions of randomly arranged short genomic segments, each representing a short fragment of a gene, that code for sections of proteins (ESTs). In order to find the full coding sequence of the gene, scientists must be able to effectively cluster and assemble these millions of ESTs, a process which poses significant computational challenges.

*Experimental Challenge: Errors and Anomalies:* Experimental errors and anomalies, including sequencing errors, the fusion of two nucleotide sequences from different loci (chimeric events), vector contaminations and genomic contaminations introduce errors into data and complicate the analysis of such data.

*Biological Challenge: Alternative Splicing:* Alternative splicing is the expression of more than one protein from the same genomic location (also known as "locus") that results from the alternative splicing of mRNA segments. It is now generally accepted by the scientific community that alternative splicing occurs in somewhere between 40% and 60% of the human genes. Alternatively spliced proteins often perform different functions, may be produced in different organs and in different physiological conditions. We believe that, in general, effective analysis of genomic data must take this phenomenon into account.

*Biological Challenge: Antisense:* Naturally occurring antisense refers to the occurrence of genes that are located on opposite strands of DNA of the same genomic locus. The nucleic acid sequence of these are complementary to each other and of opposite orientation. We have found that naturally occurring antisense occurs in thousands of loci in the genome. Failure to identify the occurrence of antisense, may lead the erroneous prediction of mRNA (transcripts).

***Challenges in Research Tools, Functional Genomics and Proteomics***

The following are some of the most important challenges in creating research tools which will effectively analyze the biological data described above.

*Challenges in Developing Efficient Gene Expression Experimental Devices:* The use of gene expression experimental devices enable scientists to perform thousands of measurements of mRNA expression levels in a tissue sample in a single experiment. While important advances have been made in gene expression technology, we believe that such technology can be further improved by developing better probe design capabilities. The main challenges in the selection of probes for gene expression experiments are:

- selecting error-free probes that accurately reflect the exact genes (or corresponding mRNA) of interest;
- selecting probes that are unique to the genes (or corresponding mRNA) of interest;
- ensuring that the probes account for the different alternative splice variants of the genes; and
- ensuring that the probes are constituted by a sequence capable of effectively binding to corresponding portions of genes that such probes represent (this is known as "hybridizing").

Scientists need a reasonably complete picture of all of the possible mRNA, including alternative splice variants, of a tested organism.

\_\_\_\_(20)\_\_\_\_

*Challenges in Getting Better Information From Protein Separation Using 2-D Gels:* Proteomics research aims at characterizing the many thousands of proteins found in organisms and identifying the specific tissues where they are located, including normal as contrasted with diseased states. Although still facing technological challenges, typical of an early phase science, the field of proteomics is believed to be indispensable in understanding disease mechanisms and identifying therapeutic targets. One of the main challenges associated with analyzing proteomic data is separating out individual proteins from a mixture of proteins. This is done using a widely used technique known as 2-D Gel PAGE (or polyAcrylamide Gel Electrophoresis). Proteins comprising a protein mixture can be separated through the use of gels based on their molecular weight and the proteins electric. After the separation process is completed, two or more gels are compared for differences between them. The technology of separating proteins by using 2D gels has been available for over 20 years and, although widely used, it has significant limitations. For example, often biologists performing the same experiment in seemingly the same conditions obtain completely different results. This has led many researchers to search for other protein separation techniques.

## **Our Technologies, Tools and Services**

Our core technology and expertise is the modeling of biological phenomena in the field of molecular biology and applying this modeling to the analysis of biological data. This technology, which includes our clustering and assembly technology, has enabled us to efficiently and effectively extract valuable information from genomic, functional genomics and proteomic databases. We have applied our technology and expertise in the fields of functional genomics, to improve the design of probes for gene expression experiments and also in proteomics. We have also created user-friendly applications that allow scientists in the field of genomics, functional genomics and proteomics to quickly obtain results using our modeling and analytical tools.

### ***Core Technology - LEADS and Related Product and Service Offerings***

Our clustering and assembly software technology is primarily used in analyzing DNA and EST sequence data. This technology involves seven major steps:

- First, it examines the expressed input data, which is EST or mRNA sequences, and cleans it by eliminating erroneous sequence fragments and marking for identification repetitive and low complexity sequence fragments.
- Second, it compares the cleaned expressed data to the available genomic data, and finds the best possible genomic location.
- Third, based upon the location of the expressed data on the genomic data, it forms groups of EST and mRNA sequences that are located in the same genomic area, and have overlapping regions (clusters), along with the relevant genomic sequence.
- Fourth, it assembles sequences in most of the genomic clusters, taking into account alternative splicing, and derives a consensus genomic sequence, putative genomic segments from the same gene that are not spliced out and therefore are parts of mature mRNA (exons) and putative segments located between expressed segments of a single gene, that are spliced out. A consensus sequence is a predicted combination of all putative exons in a cluster inferred from the data available about these segments. The consensus may or may

not exist in nature. This consensus accounts for alternative splicing by re-inserting exons that are left out of each different alternative spliced sample. Introns are considered part of a gene, although they are not part of the mature mRNA.

- Fifth, a transcript is inferred from the combination of some or all contig segments in the order suggested by the biological data. In cases of alternative splicing, a contig has multiple transcripts, each with a different and usually overlapping set of segments.
- Sixth, it takes all the cleaned expressed data that cannot be located on the genomic data, and taking into account alternative splicing, forms expressed contigs.
- Seventh, it automatically annotates the thousands of predicted genes and presents concise analytical findings for each gene to be used for further evaluation by biologists and other life scientists. This annotation includes predicted SNPs, predicted coding regions, and homology information relating to these coding regions.

\_\_\_\_(21)\_\_\_\_



### *LEADS for Genomic and Expressed Data*

Our LEADS software platform for computational biology analyzes genomic and expressed sequence data to enable rapid discovery of genes, splice variants and gene function. LEADS solves quantitative and qualitative problems inherent in the analysis of EST data and allows molecular biologists to quickly identify genes from gene fragments. Most LEADS customers have in-house access to the product, which gives them the capability to analyze their own databases in conjunction with public data.

LEADS improves the quality of available genomic and expressed sequence data by, among other things:

- eliminating overlapping regions of sequences belonging to the same gene, thus reducing the size of the databases and the amount of required analysis;
- improving gene coverage by creating a fuller picture of gene structure from EST fragments;
- detecting and correcting sequencing errors;
- detecting and accounting for instances of alternative splicing, antisense and changes in single nucleotides (also known as "single nucleotide polymorphisms" or "SNPs") and distinguishing these occurrences from sequencing errors;
- detecting other experimental anomalies, including chimeric sequences, and contaminations; and
- automatically annotating the resulting sequences.

### *Genecarta*

Genecarta is an annotated database representing the genome, transcriptome (which is comprised of RNA molecules) and proteome. It is comprised of the data obtained from the periodic application of our LEADS software platform to various public databases. Genecarta includes three components: the database, a graphical user interface, and query tools. The current version of Genecarta includes a gene index, with predicted splice variants, genomic alignments, the location of a gene on one of the DNA-containing linear bodies of a cell nucleus (chromosomal location), alignment of ESTs and known mRNAs to their genes, predicted SNPs (based upon the multiple alignments of the DNA, mRNAs and ESTs) and a prediction of the expression distribution of the gene in the body tissues (based on SAGE tag prediction and libraries). Each predicted transcript is further analyzed and annotated, resulting in predicted proteins (where identified), annotation of the predicted functionality and process in which the proteins are involved (using GO descriptions) and homologies to known and predicted proteins and protein domains. The browser interface provides an intuitive graphic presentation of database elements and their inter-relationships, which enables users to browse the genes efficiently. The query tools are suitable for various types of experimental approaches, and enable users to perform searches from multiple entry points. The current version of Genecarta, Version 3.2, includes human, mouse, rat, zebrafish and arabidopsis (a species of grass used as a model for botanical studies) data.

To date, we have found full or partial sequence information for thousands of predicted human proteins that we believe have not been discovered by others. This information exists in our Genecarta annotated database.

We commenced marketing Genecarta in the first quarter of 2001 and offer it as a complete package including the hardware, software and database, which we install at customers` sites and update regularly. We also offer Genecarta in the form of a license to access and query the Genecarta database over the Web, without providing any hardware and without installing software on the customer`s computer.

*Oligo Design Service and OligoLibraries*

We apply our LEADS software platform technologies to develop more efficient probe design for gene expression experiments. With our technology, we are able to improve the efficiency and accuracy of probe design, thereby enabling more informative and accurate analysis of gene expression experiments and a significant improvement in the quality of the results. We believe that the main challenge in effective oligo design is to select sensitive and specific probes that will represent their corresponding genes and all their splice variants, or alternatively, will ensure accurate differentiation between the different expressed forms, or alternative splice variants, of these genes.

\_\_\_\_(22)\_\_\_\_

*Oligo Design Service* - Our probe design service offers the following advantages:

- it reduces the number of redundant clusters, allowing representation of a larger number of genes on any given gene expression device by more accurately clustering large amounts of EST and genomic data;
- it identifies sequencing errors, SNPs and introns in ESTs and selects probes from the most error-free and intron-free regions it identifies, making our probes high quality representatives of the desired transcripts;
- it can select probes in a manner designed to either maximize the differentiation between different splice variants or maximize the chance that alternatively spliced variants of a gene will be identified, depending on the customer's needs; and
- it designs probes to be as specific as possible to genes of interest, by comparing the probes to other transcripts in the transcriptome.

-

*OligoLibraries* - OligoLibraries are oligonucleotide collections, representing genes, or sub-sets of genes, of various organisms. They are designed to provide scientists with a more accurate solution for the rapidly growing area of high-throughput analysis of gene function. Our OligoLibraries are based on probe selection using our LEADS technology platform and our proprietary design tools. These technologies enable us to address redundancy, account for alternative splicing, choose oligos of high sequence quality, and consider specificity and cross-homology while designing optimum oligos for gene expression, drug discovery or functional assays.

## **Other Product Offerings**

### **Bioccelerators**

Our Bioccelerator line of products consists of dedicated computers designed to accelerate similarity, or homology, searches in nucleotide and protein sequence databases. Some of the rigorous algorithms used for these types of searches are computationally intensive, forcing researchers to use possibly less sensitive but faster algorithms. By performing rigorous searches significantly faster than a typical high-end single-processor workstation, the Bioccelerator makes the use of more sensitive algorithms more attractive.

Since 1994, we have sold Bioccelerator products to over 40 customers worldwide, including many of the leading companies and research institutions in the field of genomic research.

*Our Proteomics Products.*

*Z3 2D-PAGE Gel Analysis* - our Z3 2D-PAGE gel analysis uses advanced computational technologies and novel algorithms for image registration, spot detection and differential expression calculation, in order to automatically analyze 2D gel images. Z3's raw master gel module, designed to maximize the amount and quality of information derived from repeat runs, and the multiple gel analysis mode enable high throughput analyses in multiple gel studies. The product's color coding enables users to instantaneously detect differential expressions.

*Z4000 2D-PAGE GEL Analysis* - our Z4000 is based on the Z3 technology and is designed to enable analysis of a large number of gels. Z4000 allows the user to organize the experiment in a hierarchical manner according to the different dimensions tested and control the study's progress. The Z4000's workflow is designed to extract the most significant data out of the images while enabling the user, at any point, to view the entire expression level of a certain protein across the experiment. Z4000 also includes important query possibilities that allow the user to extract meaningful information from the data accumulated in the study.

\_\_\_\_(23)\_\_\_\_

*Selected Customers and Collaborators*

Company	Agreement	Commencement Date
LEADS		
Pfizer Inc.	We granted Warner Lambert Company (now Pfizer) a non-exclusive license to use LEADS for analyzing genomic and expressed data for all of Pfizer`s internal research and development activities. This agreement accounted for approximately 35% of our revenues from products and services in 2000, approximately 30% of our revenues from products and services in 2001 and approximately 14% of our revenues from products and services in 2002. The LEADS component of the Agreement expired in September 2002.	October 1998
Novartis Pharma A.G.	We granted Novartis a non-exclusive license to use LEADS for analyzing genomic and expressed data for Novartis and its affiliates` internal research and development activities in exchange for an annual license fee. In July, 2002 we amended our agreement with Novartis, under which the parties engage in joint research and collaboration to design molecules for RNA interference. Compugen`s role was to create software for the design of oligonucleotide interference molecule sequences. Our agreement with Novartis accounted for approximately 17% of our revenues from products and services in 2001 and for approximately 18% of our revenues from products and services in 2002. Our agreement with Novartis is for a term of three years.	July 2001
diaDexus Inc.	We entered into a Service Agreement under which we used LEADS to perform an analysis of both proprietary and public genomic and proteomic data for the development of human diagnostic and therapeutic products. This agreement accounted for approximately 12% of our revenues from products	December 2001

Edgar Filing: COMPUGEN LTD - Form 20-F

	and services in 2002. Our agreement with diaDexus expired in February 2003.	
Abbott Laboratories	We granted Abbott a non-exclusive license to our LEADS computational biology platform for the analysis of human genomic data, creating a comprehensive transcriptome database that represents the repertoire of human mRNA molecules.	December 2002
GENECARTA		
GeneLogic Inc.	We entered into a Collaboration Agreement pursuant to which we customized and integrated our human Genecarta database with the gene expression information in Gene Logic's GeneExpress&reg Suite.  Gene Logic is marketing this customized human Genecarta database as an add-on component available to its existing and prospective GeneExpress&reg Suite customers.	January 2002
OLIGOLIBRARIES		
Sigma Genosys, Inc., a wholly-owned subsidiary of Sigma Aldrich, Inc.	We entered into a Joint License and Marketing Agreement for the production of OligoLibraries and their marketing as co-branded products. Compugen provides the designs for these products, Sigma manufactures them and both parties market and sell them. The OligoLibraries product line includes collections representing the human, mouse, rat, zebrafish and bacillus subtilis genome substances.	May 2001

## **Our Discovery Activities**

We use the capabilities of our pioneering platforms to identify genomic sequences and putative proteins that those sequences encode. We seek to discover novel proteins and mRNAs that have potential pharmaceutical therapeutic or diagnostic uses. Our in-house molecular biology laboratories validate the predictions generated by our platforms. The validation may also be performed in our molecular biology laboratory or in one of our collaborator`s molecular biology laboratory, such as a university or another academic institution. We have successfully verified the existence of a large proportion of our predicted potential therapeutic proteins and diagnostic markers.

During the past two years we expanded our discovery activities. We discover and seek to commercialize potential therapeutic proteins and diagnostic markers, for which we pursue commercial relationships with leading biotechnology, diagnostic and pharmaceutical companies. During 2002, we also launched a protein development team, which focuses on protein expression and purification.

Using our proprietary analysis and predictive models, our discovery team has identified full or partial sequence information for thousands of predicted mRNAs. We believe these mRNAs are novel and were not previously identified in any public databases, published scientific literature or patents. In about 90% of the approximately 300 cases we have tested in our laboratory, we verified the existence of the genes predicted by our analysis.

## ***Our Discoveries***

### *General Biological Phenomena:*

- *Significance of general biological phenomena* - We believe that the understanding of one scientific phenomenon that is derived from an understanding of other scientific phenomena is made possible as science transforms and matures from largely observational to more predictive. We believe that pharmaceutical research and development is now undergoing this process. As the language of mathematics is increasingly being used to create predictive models for important aspects of life science, we believe that there will be radical changes in the process of pharmaceutical research and development. Through our unique multidisciplinary approach and proven capabilities, we intend to establish ourselves as a worldwide leader in this ongoing revolution. The creation of predictive models presents numerous important commercial opportunities for us. Three examples are our discovery new proteins PSA-LM, K-LM and VEGF114.
- *Alternative Splicing* - alternative splicing is a biological phenomenon whereby one gene may express more than one protein. Since 1997, by applying our proprietary LEADS platform to the analysis of publicly available genomic information, we discovered that the phenomenon of alternative splicing occurs in at least 30% of human genes. Previously, alternative splicing was believed to occur in only a very small number of genes. By having identified the wide-spread nature of the alternative splicing phenomenon and having developed the computational tools to identify it, we are able to discover unknown proteins that are encoded by known genes.

- *Antisense* - antisense is a biological phenomenon of the existence of two genes that are located on opposite strands of DNA and, therefore, have complementary nucleic acid sequences. In 2002, by applying our proprietary LEADS platform to the analysis of publicly available genomic information, we discovered that the phenomenon of antisense, in the human genome, was significantly more common than previously believed. We identified hundreds of antisense pairs of genes and published our findings in the April 2003 issue of *Nature Biotechnology*, Volume 21, No 4.

*Specific Proteins:*

- *Potential Diagnostic Markers PSA-LM and K-LM* - In February 2002 we announced the discovery of two novel prostate-specific proteins. This discovery was published in the May 17, 2002 issue of *The Journal of Biological Chemistry*. These proteins are encoded by alternative mRNA splice variants of the genes for prostate specific antigen (PSA) and its related protein, human kallikrein 2 (hK2). The novel transcripts were predicted using our LEADS platform and then verified in our molecular biology laboratory. These novel proteins may have important applications in developing additional diagnostic tools for prostate cancer and for understanding the disease. Prostate specific antigen (PSA) is the premier tumor marker for screening, diagnosis, monitoring and prognosis of prostate cancer. Despite the substantial experimental research of the PSA field, the variant molecules that we discovered had not been discovered previously.



- *Potential Therapeutic Proteins - VEGF114* - In April 2003 we announced the discovery of VEGF114, a variant protein expressed from the vascular endothelial growth factor (the "VEGF") gene. We have been granted a United States patent covering the protein sequence of this novel VEGF splice variant, vectors and host cells containing VEGF114 sequences, and pharmaceutical drugs and detection methods developed using VEGF114 sequences. Modulation of VEGF activity may have clinical applications in cancer, cardiovascular and related diseases, and in fertility control. Although the VEGF gene has been the subject of extensive worldwide research the existence of our splice variant was unknown. Our discovery was made possible through the predictive capability of our LEADS platform, coupled with additional proprietary discovery technologies and experimental validation in our molecular biology laboratory.

### ***Our Commercial Collaborations***

We intend to continue commercializing the most promising discoveries through collaborations and licensing arrangements with third parties, primarily pharmaceutical and biotechnology companies. Currently, we intend to market some of our therapeutic product candidates at the preliminary stage of pre-clinical trials. In addition, we intend to pursue collaborations with pharmaceutical and biotechnology companies and research and academic organizations for the joint discovery, development and commercialization of therapeutic proteins and diagnostic markers. We believe that by combining our computational and experimental capabilities with proprietary technologies of potential collaboration partners, we can substantially increase both our chances and our potential collaborators' chances of successfully discovering, developing and commercializing therapeutic and diagnostic products. At the same time, we are recruiting experienced personnel for the purpose of building our internal capabilities in order to further develop products ourselves should we decide to do so.

To date, we have entered into two licensing agreements.

- In December 2002, we granted a license Diagnostic Products Corporation ("DPC"), on an exclusive basis, to develop and commercialize *in-vitro* diagnostic assays based on our two novel prostate-specific proteins (PSA-LM and K-LM proteins), for the use in the field of cancer immuno-diagnostics. In consideration we will receive milestone payments and royalties based on the commercialization of our intellectual property.
- In April 2003, we granted a license MultiGene Vascular Systems Ltd. ("MGVS"), on a non-exclusive basis to develop and commercialize gene and cell therapy products incorporating our VEGF114 splice variant for use in the treatment of cardiovascular diseases. Under the terms of the agreement, we will receive an equity stake in MGVS and royalties on any future product sales.

In addition, to date, we have entered into a number of academic collaborations, with academic institutions for certain aspects of our research.

### **Other Activities**

#### ***Chemistry Activities***

-

To date, there exists no systematic method for guaranteed discovery lead compounds for protein targets. Existing techniques are largely based on trial and error methodology.

Our mission in the field of chemistry is to develop a unique technology for systematically discovering lead compounds for protein targets. Our technology is based on incorporating ideas and methods from mathematics, computer science and physics into the discipline of organic chemistry. If we are successful, the resulting technology will provide for the rapid creation of lead compounds, without there being a need for high throughput screening of large "drug like" compound libraries. We have made substantial progress since initiating our activities in this field, approximately three years ago. Since the underlying scientific basis of our project has not yet been fully validated, we cannot give any assurance that this technology will indeed be validated and, even if validated, that we will be able or willing to commercialize it.

Although we are currently funding all of our research and development in the field of chemistry, these activities are advancing towards a stage where, for its continued progress, additional resources will be required. The Company is currently initiating discussions with potential partners.

\_\_\_\_(25)\_\_\_\_

### ***Medicine Activities***

One of the main challenges faced by the pharmaceutical and medical communities is the existence of large variations in the response of different patients to the same drug. This variation adds to the complexity of developing therapeutic products. Our objective in the field of medicine is to develop a unique technology for systematically discovering correlations between the administration of a drug (or other treatments) and the response caused by that drug. Our technology is based on incorporating ideas and methods from mathematics and computer science, as well as biology, into the discipline of medicine. Our goals include to increase the benefit from and safety of drug use and to improve the design of clinical trials. To accomplish this goal, we are attempting to develop an advanced drug response analysis platform, based on an analysis of multiple types of information that may include patient medical history files from health care providers, information from clinical trials and environmental, genomic and phenotypic information. Our first pilot project is currently undergoing development and validation. We cannot assure you that our approach will ever be validated and, if validated, we cannot assure you that we will ever be able or willing to commercialize this platform or technologies.

We already have in place research collaborations and we are seeking further research collaborations with pharmaceutical companies and/or health care organizations. However, we do not anticipate commercializing this platform in the near future.

### **Our Strategy**

We strive to substantially increase the probability of success of drug and diagnostic product discovery and development. The key elements of our business strategy are:

*Discovery-Based Revenues.* We commercialize and intend to continue to commercialize potential therapeutic proteins, diagnostic markers and other intellectual property that we continue to discover in our research and development efforts. We intend to commercialize our intellectual property portfolio with an emphasis on royalty bearing and other revenue-sharing arrangements with diagnostics, pharmaceutical and biotechnology companies. We have currently identified a number of proteins that we believe are the basis for the potential development of therapeutic or diagnostic products and are candidates for further development and licensing. To date we have implemented this strategy by granting a license to DPC on an exclusive basis to develop and commercialize *in-vitro* diagnostic assays based on our two novel prostate-specific proteins, for the use in the field of cancer immuno-diagnostics. We also granted a license on a non-exclusive basis to MultiGene Vascular Systems Ltd. ("MGVS"), to develop and commercialize gene and cell therapy products incorporating VEGF114 splice variant for use in the treatment of cardiovascular diseases.

*Technology-Based Revenues.* We plan to continue to pursue collaborations and other agreements with leading biopharmaceutical companies for the commercialization of our LEADS software platform and our other existing and future tools and services.

*Expand our Technological Leadership.* Our current technologies address an immediate need of the pharmaceutical and biotechnology industries to improve the probability of success of the drug development processes. We intend to continue to use our multidisciplinary approach to molecular biology in order to discover and commercialize potential novel therapeutic proteins and diagnostic markers, as well as solutions to the industry's future biological challenges. In addition, our Chemistry division is currently applying our unique approach to creating novel technologies for discovering lead compounds for protein targets. Finally, in the area of medicine, we focus on improving the efficiency of drug use, using advanced drug response analysis through patient stratification based on multiple information types.

\_\_\_\_(26)\_\_\_\_

### **Agricultural Biotechnology Company in which Compugen Has Equity Interest**

In October 1999, we formed a division focusing on agricultural biotechnology and plant genomics. On January 1, 2002, we spun-off the business of this division into a majority-owned subsidiary, Evogene Ltd., in which Compugen holds 1,640,000 ordinary shares, representing 82% of the outstanding shares. On January 6, 2003, Evogene entered a Convertible Loan Agreement with a group of new lenders for the aggregate amount of two million dollars. Compugen did not participate in this financing round. As part of this convertible loan, Compugen agreed to (1) forgo the entire loan that it extended to Evogene upon Evogene's incorporation, in the amount of \$900,000 plus all accrued interest, and (2) extend the term of the license to use certain of Compugen's computational tools free of charge, that was granted to Evogene upon Evogene's incorporation, until December 31, 2005. (See Item 7. Major Shareholders and Related Party Transactions. Related Party Transactions. Evogene Ltd.).

### **Sales and Marketing and Business Development**

Since our founding in 1993, we have devoted most of our capital and human resources to research and development of our technologies, products and services. Between 1999 and 2001 we significantly expanded our sales and marketing capabilities.

In the United States, we have marketing, sales and business development presence in Sunnyvale, California, Jamesburg, New Jersey, and Rockville, Maryland. We also perform some of our research and development in our New Jersey premises. We also conduct marketing, sales and business development from our Tel Aviv offices, and sales activities from the United Kingdom.

The approximate geographic breakdown of our total sales from products and services for the year ended December 31, 2002 was 68% in North America, 20% in Europe, 7% in the Far East and 5% in other countries. The approximate geographic breakdown of our total sales from products and services for the year ended December 31, 2001 was 68% in North America, 22% in Europe, 8% in the Far East and 2% in other countries. The approximate geographic breakdown of our total sales for the year ended December 31, 2000 was 94% in North America, 3% in Europe, 2% in the Far East and 1% in other countries.

As of December 31, 2002, our sales, marketing and business development staff consisted of 18 employees, with 10 based in the United States, 6 based in Tel Aviv and 2 based in England.

We plan to continue to aggressively market our technologies, products and services to pharmaceutical and biotechnology companies. To accomplish this we intend to:

- recruit additional business development personnel in the United States;
- continue to enter into commercial arrangements with third parties with respect to some of our products and services. In the past, these arrangements included worldwide marketing arrangements such as our agreement with Sigma-Genosys relating to our OligoLibraries and our arrangement with Gene Logic relating to Genecarta. In the future, our commercial arrangements may be of a different nature;
- continue to exhibit and speak at industry and scientific conferences; and
- continue to increase the awareness to our technologies and products through publications in scientific journals and coverage in trade and general media.

## **Intellectual Property Rights**

We seek patent protection for certain components of our technology platform, including analysis techniques, and for certain of our discoveries relating to genomic and protein sequences. We also rely heavily on confidentiality obligations to protect our trade secrets and confidential and proprietary information. We use license agreements both to access third party technologies and to grant licenses to third parties to use our intellectual property rights. Our commercial success will be dependent in part on our ability to obtain commercially valuable patent positions, maintain the confidentiality of our trade secrets and otherwise protect our intellectual property portfolio.

\_\_\_\_(27)\_\_\_\_

Our strategy to apply for patents relates primarily to certain aspects of our computational technologies, certain databases and individual nucleic acid and amino acid sequences. The latter comprises approximately 35 patent applications (not including foreign counterparts).

The patent positions of biotechnology companies, including ours, are generally uncertain and involve complex legal and factual questions that are still evolving. Our business could be harmed by any of the following:

- our pending patent applications may not be accepted by United States Patent and Trademarks Office and, where relevant, corresponding patents jurisdictions and, therefore, may not result in issued patents;
- the claims of any patents that may be issued from an application may not provide meaningful protection;
- we may not be successful in developing additional proprietary technologies that can be effectively protected;
- patents that we may ultimately obtain may not provide a basis for commercially viable products or any competitive advantages;
- patents that we obtain may be successfully challenged by third parties; and
- third parties may have patents that claim the inventions or technology that we use.

The degree of future protection for our intellectual property is therefore uncertain. Furthermore, others may independently develop similar or alternative technologies, duplicate any of our technologies or, if patents are licensed or issued to us, design around the patented technologies licensed to or owned by us. Other third party technologies may also provide third parties with competitive advantages over us and may harm our business. In addition, we could incur substantial costs in litigation if we are required to initiate suits to prevent infringement of our patents, once issued, or to defend ourselves in patent suits brought by third parties.

These costs could significantly increase our expenses and our losses. Furthermore, in circumstances where claims relating to proprietary technology or information are asserted against us, we may seek licenses to this intellectual property. However, any required licenses may not be made available on commercially viable terms, if at all. Failure to obtain any required license could prevent us from using or commercializing one or more of our technologies or discoveries.

We have applied, and intend to make additional applications, for patent protection for inventions relating to novel genes and splice variants and to novel uses for known genes or splice variants identified through our research discovery programs. To date we have one patent issued in our name. We may not be able to continue to obtain patent protection for our inventions.

Several companies and other organizations are attempting to obtain patents relating to novel genes and gene fragments and uses for known genetic sequences, whose functions have not been characterized, as well as for fully characterized genetic sequences. To the extent any patents are issued to other parties on these partial or full-length genes, we may be

prevented from commercializing such genes or products or processes, which are based on such genes. Others may have filed, and in the future are likely to file, patent applications covering genes or gene products that are similar or identical to those for which we may seek patent protection. These patent applications may have priority over patent applications filed by us. Any legal action against us or our customers claiming damages and seeking to enjoin commercial activities relating to the affected products and/or processes could, in addition to subjecting us to potential liability for damages, require us, our consultants and/or our customers to obtain a license in order to continue to manufacture or market the affected products and processes. We, our consultants or our customers may not prevail in any action, and any license required under any patent may not be available on commercially acceptable terms, if at all. In light of the nature of our industry, we believe that there is likely to be litigation in the industry regarding patent and other intellectual property rights. If we become involved in litigation, it could consume a substantial portion of our managerial and financial resources and negatively affect our financial results.

With respect to proprietary know-how that is not patentable or that we choose not to patent, we rely on trade secret protection and confidentiality agreements to protect our interests. We believe that several elements of our computational genomics, functional genomics and proteomics capabilities involve proprietary know-how, technology or data that are not covered by patents or patent applications. In addition, we have developed a proprietary database of genes, alternative splice variants, gene fragment sequences, and methods for discovering novel biological phenomena, which we update on an ongoing basis. Some of these data is the subject to patent applications.

\_\_\_\_(28)\_\_\_\_



We have implemented security measures to protect our proprietary know-how and technologies and confidential data, including a range of confidentiality agreements with our employees, consultants and customers. While we require employees, consultants and customers to enter into confidentiality agreements, we cannot be sure that proprietary information will not be disclosed in violation of these agreements, that others will not independently develop substantially equivalent proprietary information and techniques or that we can otherwise meaningfully protect our trade secrets. In the case of arrangements with our customers that require the sharing of information, our policy is to make available to our customers only information that is relevant to our agreements with these customers, under controlled circumstances, and only during the contractual term of those agreements, and subject to a duty of confidentiality on the part of our customer. However, these measures may not adequately protect our information. Any material leak of confidential information into the public domain or to third parties may cause our business, financial condition and results of operations to be harmed.

We are a party to various license agreements that give us rights to use technologies and biological materials in our research and development processes. We may not be able to maintain these rights on commercially reasonable terms, if at all. Our failure to maintain these rights could harm our business.

## **Competition**

The biotechnology and pharmaceutical industries are highly competitive. We face tough competition from numerous companies, some of which are more established, may benefit from greater market recognition and have greater financial, production and marketing resources than we do. Our principal competitors include:

- Celera Genomics Group, which provides genomic data that may compete with our LEADS platform, Genecarta and our genomic services;
- Incyte Genomics, Inc., which provides genomic data that may compete with our LEADS platform and Genecarta;
- Lion Bioscience AG, which provides genomic research and infrastructure tools and services that may compete with our genomic services;
- Amersham Pharmacia Biotech, Nonlinear Dynamics Ltd., Biorad, Inc., Geneva Bioinformatics S.A. and Definiens AG, which provide 2D-gel analysis systems that compete with our Z3 product;
- Nonlinear Dynamics Ltd., which provides 2D-gel analysis systems that compete with our Z4000 product;
- MWG-Biotech AG, Operon Technologies, Inc. and Clontech Laboratories, Inc., which provide products that compete with our OligoLibraries; and
- Millenium Pharmaceuticals Inc., which have a platform for clustering and arranging ESTs.

Competition among entities attempting to identify the genes and proteins associated with specific diseases and to develop products based on these discoveries is intense. We face, and expect to continue to face, competition from pharmaceutical, biotechnology and diagnostic companies, academic and research institutions, and government agencies, in the United States and elsewhere, including many of our customers. We are aware that several of our

competitors use a variety of gene expression analysis methodologies, including the use of gene expression systems, functional information, cell based assays, animal models and proprietary ESTs, to attempt to identify disease-related genes.

In addition, our discovery activities depend, in large part, on our computational platforms and tools and proprietary data to make inventions and establish intellectual property rights in genes and proteins. We believe that access to our tools and proprietary information provides our discovery team with a competitive advantage over biotechnology companies that are pursuing patent protection that may compete with our own, including patents relating to gene and protein sequences. We may lose that advantage when we provide our customer, primarily biotechnology companies, pharmaceutical companies and diagnostic companies, access to our platforms, tools and proprietary data. If our customers, many of which have greater financial and other resources than we do, research genes or proteins that we are also researching, they may establish intellectual property rights in such genes or proteins which have priority over the protection that we are seeking. In addition, our discovery team may pursue opportunities in fields that could conflict with those of our customers or discourage potential customers from working with us. As a result, our business, financial condition and results of operations may be significantly harmed.

\_\_\_\_(29)\_\_\_\_

Our chemistry activities face fierce competition from all fully integrated pharmaceutical companies and from companies engaged in drug discovery, such as Infinity pharmaceuticals, Pharmacopia Inc., Vertex Pharmaceuticals Incorporated, Structural GenomiX Inc., Albany Molecular Research inc. and Celera Genomics Group.

Our medicine activities compete with pharmacogenomics companies, such as Genaissance, that are engaged in the prediction of drug response based on genetic information, and with organizations providing clinical trial analysis capabilities, such as Entelos, Inc., Physiome Sciences, Inc., Gene Network Sciences (GNS) and Optimata.

Many of our competitors have substantially greater capital resources, research and development staffs, manufacturing and marketing experience, distribution channels and human resources than we do. Owing to their greater resources, these competitors may discover, characterize or develop important genes, drug targets, lead compounds, drug discovery technologies or drugs before we, our customers or collaborators do so. These competitors may also discover, characterize or develop drug targets, lead compounds, drug discovery technologies or drugs that are more effective than those developed by us, our customers or collaborators, or they may obtain regulatory approvals for their drugs more rapidly than we or our customers do. Any of these events could have a material adverse effect on any of our similar programs. Moreover, our competitors may obtain patent protection or other intellectual property rights that could limit our rights or our customers' ability to use our technologies or commercialize drug, therapeutics, diagnostics or agricultural products.

### **Government Regulation**

As a company which performs life science research we use hazardous materials and tissue samples. We are subject to governmental regulations concerning this use. These regulations impose certain restrictions on our access to and use of human tissue samples. In addition, we receive research and development grants from the Government of Israel. As a result, the products of this research and development are subject to certain restrictions.

### ***Environmental Regulation***

Our research and development activities in some cases involve the controlled use of biological and hazardous materials, such as chemicals and radioactive materials. We are subject to Israeli laws and regulations governing the use, storage, handling and disposal of these materials and resulting waste products. We comply with these laws and regulations. However, the risk of accidental contamination or injury from these materials cannot be entirely eliminated. In the event of an accident, we could be held liable for any resulting damages, and any liability could exceed our resources.

***Regulation of Use of Human Tissue***

Our access to and use of human or other organisms' tissue samples in the expansion of our proprietary database or our product development may become subject to further government regulation, in the United States, Israel and elsewhere. U.S. and foreign governmental agencies may also impose restrictions on the use of data derived from human or other tissue samples. If our access to or use of human tissue samples, or our customers' use of data derived from these samples, is restricted, our business may suffer.

***Regulation of Products Developed with Governmental Support***

For a discussion of regulations governing products developed with research and development grants from the Government of Israel, see "Item 5. Operating and Financial Review and Prospects, Government of Israel Support Programs, Research and Development Grants."

\_\_\_\_(30)\_\_\_\_

### ***Regulation of the Internet***

There is an increasing body of law and regulation pertaining to the Internet. In addition, a number of legislative and regulatory proposals regarding regulation of the Internet are under consideration by Israeli and foreign governments and agencies. Laws or regulations may be adopted with respect to the Internet relating to liability for information retrieved from or transmitted over the Internet, on-line content regulation, user privacy, taxation and quality of products and services. Moreover, it may take years to determine whether and how existing laws, including those governing intellectual property ownership and infringement, privacy, copyright, trademark, trade secret, taxation and the regulation of the sale of other specified goods and services, apply to the Internet. The requirement that we comply with any new legislation or regulation, or any unanticipated application or interpretation of existing laws, may decrease the growth in the use of the Internet, which could in turn decrease the demand for our Internet-based products, increase our cost of doing business or otherwise harm our business, results of operations and financial condition.

Due to the global reach of the Internet, it is possible that governments of nations to which we transmit data over the Internet might attempt to regulate Internet activity and our transmissions or take action against us for violations of their laws. Violations of these laws may be alleged or charged by state or foreign governments. In addition, these laws may be modified, or new laws enacted, in the future. Any regulation of this type could materially harm our business, results of operations and financial condition.

### **Organizational Structure**

Compugen is the parent of one wholly-owned subsidiary, Compugen, Inc., which is incorporated in Delaware and which has its principal place of business in New Jersey. Compugen owns 82% of the outstanding shares of Evogene Ltd., which was formed under the laws of the State of Israel and which has its principal place of business in Rehovot, Israel (See Item 7. Major Shareholders and Related Party Transactions. Related Party Transactions. Evogene Ltd.).

### **Property, Plant and Equipment**

We lease an aggregate of approximately 2,300 square meters of office and laboratory facilities in Tel Aviv, Israel, and approximately 720 square meters of office and laboratory facilities in Ashqelon, Israel. The leases in Tel Aviv expire on December 31, 2006 and the lease in Ashqelon expires on September 2006.

Edgar Filing: COMPUGEN LTD - Form 20-F

In addition, Compugen, Inc. leases approximately 4,490 square feet of office space in Jamesburg, New Jersey, approximately 233 square feet of office space in Sunnyvale, California, and approximately 450 square feet of office space in Rockville, Maryland. The lease in New Jersey expires in December 2005, the lease in Sunnyvale expires on November 2003, and the lease in Maryland expires on December 2004.

Evogene Ltd. leases approximately 289 square meters of offices and laboratory facilities in Rehovot, Israel. The lease expires in March 2004.

We believe that the facilities we currently lease are sufficient for approximately the next 12 months.

\_\_\_\_(31)\_\_\_\_

**ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS****Selected Financial Data**

The following discussion and analysis is based on and should be read in connection with the Company's audited consolidated financial statements, including the related notes, contained in "Item 18 - Financial Statements" and the other financial information appearing elsewhere in this annual report.

**Year ended December 31,**

**1998\*      1999\*      2000\*      2001\*      2002**  
**(U.S. \$ in thousands, except share and per share data)**

**Consolidated Statements of Operations Data**

Revenues:					
Products	\$4,020	\$783	\$2,268	\$5,883	\$5,014
Services	511	2,454	4,623	4,483	4,248
Research and development grants	<u>333</u>	<u>507</u>	<u>466</u>	<u>994</u>	<u>1,835</u>
Total revenues	4,864	3,744	7,357	11,360	11,097
Cost of revenues:					
Products	1,399	611	477	1,853	1,411
Services	100	480	1,243	1,602	1,408
Research and development expenses	3,900	7,183	12,635	15,976	14,170
Sales and marketing expenses	924	1,166	3,781	6,565	5,538
General and administrative	-	-	-	-	-
Expenses	<u>1,815</u>	<u>3,152</u>	<u>5,397</u>	<u>4,383</u>	<u>3,614</u>
Total operating expenses **	<u>8,138</u>	<u>12,592</u>	<u>23,533</u>	<u>30,379</u>	<u>26,141</u>
Operating (loss) profit	(3,274)	(8,848)	(16,176)	(19,019)	(15,044)
Financial and other income, net	<u>192</u>	<u>719</u>	<u>2,772</u>	<u>3,875</u>	<u>2,840</u>
Net loss	<u>\$ (3,082)</u>	<u>\$ (8,129)</u>	<u>\$ (13,404)</u>	<u>\$ (15,144)</u>	<u>\$ (12,204)</u>
Dividends related to convertible preferred shares	882				
Net loss available to ordinary shares	<u>(3,964)</u>	<u>1,886</u>	<u>24,923</u>	<u>(15,144)</u>	<u>(12,204)</u>
Basic and diluted net loss per	-	-	-	-	-
ordinary share ***	<u>\$ (0.67)</u>	<u>\$ (1.70)</u>	<u>\$ (2.75)</u>	<u>\$ (0.58)</u>	<u>\$ (0.47)</u>
Weighted average number of ordinary	-	-	-	-	-
shares used in computing basic	-	-	-	-	-
and diluted net loss per share	-	-	-	-	-

Edgar Filing: COMPUGEN LTD - Form 20-F

	<u>5,886,208</u>	<u>5,896,780</u>	<u>13,914,485</u>	<u>26,005,784</u>	<u>26,103,343</u>
Pro forma basic and diluted net loss	-	-	-	-	-
Per share (unaudited) ****	\$ (0.29)	\$ (0.58)	\$ (0.69)	=	=
Pro forma weighted average number of	-	-	-	-	-
shares outstanding (unaudited) ****	<u>10,749,861</u>	<u>14,102,899</u>	<u>19,305,553</u>	=	=

\_\_\_\_(32)\_\_\_\_



**As of December 31,**

	<b><u>1998</u></b>	<b><u>1999</u></b>	<b><u>2000</u></b>	<b><u>2001</u></b>	<b><u>2002</u></b>
	<b>(U.S. \$ in thousands)</b>				
<b>Consolidated Balance Sheet Data:</b>					
Cash and cash equivalents, short-term cash deposits and marketable securities	\$ 19,941	\$ 11,436	\$ 90,675	\$ 32,347	\$ 48,402
Long-term investments in marketable securities and cash deposits	-	-	-	46,148	18,940
Receivables, net	905	710	2,720	3,159	4,581
Inventory	530	380	347	134	111
Total assets	23,279	15,518	97,872	87,289	77,257
Accumulated deficit	(6,788)	(14,917)	(53,244)	(68,388)	(80,592)
Total shareholders' equity	18,780	12,787	92,510	80,062	68,881

(\*) Reclassified

(\*\*) Includes deferred stock compensation - see Note 12 to the consolidated financial statements.

(\*\*\*) Basic and diluted net loss and pro-forma basic and diluted net loss, for the year ended December 31, 2000 exclude the non-cash dividend recorded in the amount of \$24.9 million related to the beneficial conversion feature of the issuance of 5,538,462 Series C preferred shares (at a price of \$6.50 per share). As per their terms, all preferred shares were converted to ordinary shares upon the closing of Compugen's initial public offering (IPO) in August 2000.

(\*\*\*\*) Pro-forma basic and diluted net loss per share and pro-forma weighted average number of shares outstanding for the year ended December 31, 2000 give effect to the automatic conversion of the preferred shares which occurred in August 2000 upon the closing of the IPO (using the "as-if converted" method from original date of issuance).

## Overview

The following discussion should be read in conjunction with the selected financial data included above and our consolidated financial statements and the related notes thereto included elsewhere in this annual report.

We are a leader in increasing the probability of success of drug and diagnostic development through the incorporation of ideas and methods from mathematics, computer science and physics into the disciplines of biology, organic chemistry and medicine. Our unique capability is the basis for both in-house discovery of potential therapeutic and diagnostic products, and the development of high value platforms, tools and services. To accomplish this goal, we have operations in the three scientific areas underlying the drug development process: biology, organic chemistry and medicine.

In the area of biology, we develop platforms and tools that enable and enhance the discovery and functional analysis of genes, proteins and cell processes. In addition, we discover and seek to commercialize, therapeutic proteins and diagnostic markers, for which we pursue commercial relationships with leading biotechnology, diagnostic and pharmaceutical companies.

Since our inception, we have incurred significant losses and, as of December 31, 2002, we had an accumulated deficit of \$55.7 million (not including approximately \$24.9 million in accumulated deficit attributable to the conversion of preferred shares upon the closing of our initial public offering). Through 2002, our revenues were primarily generated by the licensing of, and provision of services related to, our LEADS platform; sales and maintenance of Bioccelerator systems; licenses of Genecarta; licenses of Z3 and Z4000; sales of OligoLibraries; and both royalty-bearing and non-royalty bearing government grants.

\_\_\_\_(33)\_\_\_\_

We recorded compensation expenses of approximately \$5.7 million in 2000, approximately \$2.6 million in 2001 and approximately \$900,000 in 2002 in connection with the grant of share options. These amounts are being amortized over the vesting periods of the individual share options. Based on options granted through December 31, 2002, future amortization of compensation expenses are expected to amount to approximately \$506,000 in 2003 and \$74,000 in 2004. Our current policy is to grant options at the fair market value of the underlying shares on the date of grant.

In July 2000, we raised an aggregate of approximately \$35.5 million in a private placement through the issuance of 5,538,462 Series C preferred shares at a price of \$6.50 per share. As a result of this transaction, we recorded a preferred share dividend for the third quarter of 2000 of approximately \$24.9 million, representing the value of the beneficial conversion feature of this issuance, based on the difference between the conversion price of \$6.50 per share and \$11.00 per share, the range of the offering price in our initial public offering.

In August 2000, we sold 5,000,000 of our ordinary shares in the initial public offering of our shares on the Nasdaq National Market at \$10.00 per share, and in September 2000, we sold an additional 750,000 ordinary shares upon the exercise by our underwriters of their over-allotment option. Our aggregate net proceeds from these sales were \$51.1 million. All outstanding preferred shares were converted into Ordinary Shares upon the closing of the public offering.

Commencing January 1, 2001, we record research grants as part of revenues. Prior to January 1, 2001, research grants were accounted for as a reduction in research and development expenses. Our financial statements for previous years have been changed to conform to this change in 2001.

In January 2002, we listed our shares for trading in the Tel Aviv Stock Exchange (TASE).

### **Critical Accounting Policies**

Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). These accounting principles require management to make certain estimates, judgments and assumptions based upon information available at the time that they are made, historical experience and various other factors that are believed to be reasonable under the circumstances. These estimates, judgments and assumptions can affect the reported amounts of assets and liabilities as of the date of the financial statements, as well as the reported amounts of revenues and expenses during the periods presented.

In many cases, the accounting treatment of a particular transaction is specifically dictated by GAAP and does not require management's judgment in its application. There are also areas in which management's judgment in selecting among available alternatives would not produce a materially different result. Our management has reviewed these critical accounting policies and related disclosures with the Audit Committee. See Note 2 to the Consolidated Financial Statements, which contain additional information regarding the Company's accounting policies and other disclosures required by GAAP.

Management believes that the accounting policy which most affects its judgments and the estimates used in the preparation of our consolidated financial statements and which is the most critical to aid in fully understanding and evaluating our reported financial results are our Revenue Recognition policy and Allowance for Doubtful Debts.

### ***Revenue Recognition Policy***

We generate most of our revenues from collaborations and license fees of software products. We also generate revenues from sales of services including maintenance, support, customization, training and installation as well as sale of products (OligoLibraries). In addition, we recognized revenues from research and development grants (as described below). We sell our products primarily through our direct sales force and resellers, both of whom are considered end users.

\_\_\_\_(34)\_\_\_\_

We recognize software license revenue in accordance with Statement of Position 97-2, "Software Revenue Recognition" ("SOP 97-2"), as amended. SOP 97-2 generally requires revenue earned on software arrangements involving multiple elements to be allocated to each element based on the relative fair value of the elements. We have also adopted SOP 98-9, "Modification of SOP 97-2, Software Revenue Recognition with Respect to Certain Transactions" ("SOP 98-9"), for all transactions entered into after January 1, 2000. SOP 98-9 requires that revenue be recognized under the "Residual Method" when vendor specific objective evidence (VSOE) of fair value exists for all undelivered elements and no VSOE exists for the delivered elements.

Revenue from license fees is recognized when persuasive evidence of an agreement exists, delivery of the product has occurred, no significant obligations with regard to implementation remain, the fee is fixed or determinable, and collectibility is probable. At the time of the transaction we assess whether the fee is fixed or determinable. If the fee is not fixed or determinable, revenue is recognized as payments become due from the customer provided that all other revenue recognition criteria have been met. We assess the likelihood of collection based on a number of factors, including past transaction history, the credit worthiness of the customer and, in some instances, a review of the customer's financial statements.

When contracts contain multiple elements wherein VSOE of fair value exists for all undelivered elements, we account for the delivered elements in accordance with the "Residual Method" prescribed by SOP 98-9. Maintenance and support revenue included in these arrangements is deferred and recognized on a straight-line basis over the term of the maintenance and support agreement. The VSOE of fair value of the undelivered elements (maintenance, support and professional services) is determined based on the price charged for the undelivered element when sold separately.

We license products on a perpetual and on a term basis. License revenue arising from the sale of perpetual licenses and term licenses for a period longer than one year is recognized in the accounting period that the sale takes place. License revenue arising from term license for a period of less than one year is recognized over the contractual term of the license.

Revenues from software licenses that require significant customization, integration and installation are recognized in accordance with Statement of Position 81-1 "Accounting for Performance of Construction - Type and Certain Production - Type Contracts" ("SOP 81-1"), using contract accounting on a percentage of completion method, based on the relationship of actual costs incurred to total costs estimated to be incurred over the duration of the contract. Milestone payments are recognized only when performance is reasonably assured.

Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are first determined, in the amount of the estimated loss on the entire contract. As of December 31, 2002, no such estimated

losses were identified.

Arrangements that include consulting services are evaluated to determine whether those services are essential to the functionality of other elements of the arrangement. When services are considered essential, revenue under the arrangement is recognized using contract accounting. When services are not considered essential, the revenue allocable to the software services is recognized as the services are performed.

Revenue from sales of hardware systems (including associated software) is recognized in accordance with SOP 97-2, upon delivery, or at the end of the evaluation period provided all other revenue recognition criteria have been met.

Revenues from sales of products (OligoLibraries) are recognized in accordance with Staff Accounting Bulletin No. 101 "Revenue Recognition in Financial Statements" ("SAB No. 101") when the product has been delivered, persuasive evidence of an arrangement exists, the vendor's fee is fixed or determinable and collectibility probable.

Revenues from web-based services are recognized in accordance with SAB No. 101 when the service has been rendered, persuasive evidence of an agreement exists, the vendor's fee is fixed or determinable and collectibility probable.

\_\_\_\_(35)\_\_\_\_

We account for equity instruments received in accordance with Emerging Issues Task Force ("EITF") No.0-08 "Accounting by a Grantee for Equity Instruments to be Received in Conjunction with Providing Goods or Services". We deem the fair value of the equity instruments received to date to be minimal and as a result no revenues were recognized.

Revenue from maintenance contracts is recognized ratably over the term of the maintenance contract. Revenues related to other services are recognized as the services are rendered.

Royalty and non royalty bearing grants from the Government of Israel through the Ministry of Industry and Trade - the Office of the Chief Scientist of Israel ("OCS") for funding approved research and development projects, are recognized as revenues as the related research and development expenses are incurred. We are not obligated to repay any amounts received from the OCS if the research effort is unsuccessful.

Deferred revenue includes amounts received from customers for which revenue has not been recognized.

#### ***Allowance for Doubtful Debts***

Management continually reviews the collectibility of trade accounts receivable and the adequacy of the allowance for doubtful debts against the trade accounts receivable. Management specifically analyzes customer accounts, account receivable aging reports, history of bad debts and the business or industry sector to which they belong, customer concentrations, customer credit worthiness, current economic trends and any other pertinent factors. Management is able to make reasonably objective judgments on the adequacy of other provisions relating to trade accruals. We have not made any provision for contingent liabilities, which has involved significant management judgment that either we will prevail in the case of material litigation or that we have sufficient insurance to cover any adverse outcome.

#### **Results of Operations**

***Years Ended December 31, 2002 and 2001***

*Revenues.* Total revenues decreased 2% to approximately \$11.1 million for 2002 from approximately \$11.4 million for 2001. Products revenues decreased 15% to approximately \$5.0 million for 2002 from approximately \$5.9 million for 2001. The decrease in products revenues was primarily due to decreased sales of Bioccelerator systems, decreased sales of LEADS and decreased sales of Genecarta, which were partially offset by increased sales of OligoLibraries(TM). Services revenues decreased 5% to approximately \$4.2 million for 2002 from approximately \$4.5 million for 2001. Revenues from research and development grants increased 85% to approximately \$1.8 million for 2002 from approximately \$994,000 for 2001. This increase was due to an increase in grants received from the Office of the Chief Scientist of the Ministry of Industry and Trade of the State of Israel (OCS). Revenues from Pfizer, Novartis and diaDexus represented 44% of our products and services revenues in 2002.

*Cost of Revenues.* Cost of revenues decreased 18% to approximately \$2.8 million for 2002 from approximately \$3.5 million for 2001. Cost of products revenues decreased 24% to approximately \$1.4 million for 2002 from approximately \$1.9 million for 2001. This decrease was primarily due to decreased costs related to the sale of Bioccelerator systems and Genecarta, which were partially offset by the cost of sales related to our OligoLibraries. Cost of services revenues decreased 12% to approximately \$1.4 million for 2002 from approximately \$1.6 million for 2001. This decrease was primarily due to costs related to support services provided to Novartis and Pfizer.

*Research and Development Expenses.* Research and development expenses decreased 11% to approximately \$14.2 million for 2002 from approximately \$16.0 million for 2001. The decrease in research and development expenses was primarily due to the devaluation of the Israeli shekel against the US dollar and a decrease in amortization of deferred compensation to approximately \$621,000 for 2002 from approximately \$1.6 million for 2001. Research and development expenses as a percentage of total revenues decreased from 141% in 2001 to 128% in 2002.

*Sales and Marketing Expenses.* Sales and marketing expenses decreased 16% to approximately \$5.5 million for 2002 from approximately \$6.6 million for 2001. This decrease was due to the devaluation of the Israeli shekel against the US dollar, a decrease in amortization of stock based compensation expenses to approximately \$197,000 for 2002 from approximately \$510,000 for 2001, and a decrease in promotional costs and marketing expenses. Sales and marketing expenses as a percentage of total revenues decreased from 58% in 2001 to 50% in 2002.



*General and Administrative Expenses.* General and administrative expenses decreased 18% to approximately \$3.6 million for 2002 from approximately \$4.4 million for 2001. This decrease was primarily due to a decrease of approximately \$384,000 in stock based compensation expenses recorded in connection with options issued to employees and consultants. Without taking into account the stock based compensation expenses, general and administrative expenses decreased 10% to approximately \$3.5 million for 2002 from approximately \$3.9 million for 2001. This decrease was primarily due to the devaluation of the Israeli shekel against the US dollar. General and administrative expenses as a percentage of total revenues decreased from 39% for 2001 to 33% for 2002.

*Financial and Other Income, Net.* Financial and other income, net decreased 27% to approximately \$2.8 million for 2002 from approximately \$3.9 million for 2001. This decrease was attributable to lower levels of cash and cash related accounts, and lower interest rates we received on short and long-term cash deposits and marketable securities. Financial and other income, net as a percentage of total revenues decreased from 34% for 2001 to 26% for 2002.

#### ***Years Ended December 31, 2001 and 2000***

*Revenues.* Total revenues increased 54% to approximately \$11.4 million for 2001 from approximately \$7.4 million for 2000. Products revenues increased 159% to approximately \$5.9 million for 2001 from approximately \$2.3 million for 2000. This increase was due to increased sales of LEADS, sales of Genecarta, which was introduced in the second quarter of 2001, sales of OligoLibraries(TM), which were introduced on an early access basis in the second quarter, and commercially launched in October, of 2001, and sales of Z3. Services revenues decreased 3% to approximately \$4.5 million for 2001 from approximately \$4.6 million for 2000. Revenues from research and development grants increased 113% to approximately \$994,000 for 2001 from approximately \$466,000 for 2000. This increase was due to an increase in applications for grants submitted to, and grants received from, the Office of Chief Scientist of the Ministry of Industry and Trade of State of Israel (OCS). Revenues from Pfizer, the United State Patent and Trademark Office and Novartis represented 64% of our products and services revenues in 2001.

*Cost of Revenues.* Cost of revenues increased 101% to approximately \$3.5 million for 2001 from approximately \$1.7 million for 2000. Cost of product revenues increased 288% to approximately \$1.9 million for 2001 from approximately \$477,000 in 2000. This increase was primarily due to increased costs related to the introduction of new products to the market and manufacturing costs related to our OligoLibraries, which were introduced in 2001. Cost of services revenues increased 29% to approximately \$1.6 million for 2001 from approximately \$1.2 million for 2000. This increase was primarily due to costs related to support services provided to Novartis and an increase in the support services provided to Pfizer.

*Research and Development Expenses.* Research and development expenses increased 26% to approximately \$16.0 million for 2001 from approximately \$12.6 million for 2000. The increase in research and development expenses was primarily due to an increase in the number of research and development personnel to support existing as well as new

research and development projects and increased salaries. This increase was partially set off by a decrease in compensation expenses to approximately \$1.6 million for 2001 from approximately \$2.4 million for 2000. Research and development expenses as a percentage of total revenues decreased from 172% in 2000 to 141% in 2001.

*Sales and Marketing Expenses.* Sales and marketing expenses increased 74% to approximately \$6.6 million for 2001 from approximately \$3.8 million for 2000. This increase was primarily due to an increase in the number and variety of products we market and sell, an increase in sales and marketing personnel, costs related to the launch of new products, and increased promotional costs and marketing expenses to accommodate the growth of our business. Sales and marketing expenses as a percentage of total revenues increased from 51% in 2000 to 58% in 2001.

\_\_\_\_(37)\_\_\_\_

*General and Administrative Expenses.* General and administrative expenses decreased 19% to approximately \$4.4 million for 2001 from approximately \$5.4 million for 2000. This decrease was primarily due to a decrease of approximately \$2.2 million in amortization of deferred compensation recorded in connection with options issued to employees and consultants. Without taking into account the amortization of deferred compensation, general and administrative expenses increased 42% to approximately \$3.9 million for 2001 from approximately \$2.8 million for 2000. This increase was primarily due to an increase in personnel to support the growth of our business, the leasing of additional office space and human resource activities. General and administrative expenses as a percentage of total revenues decreased from 73% for 2000 to 39% for 2001. Excluding expenses related to the amortization of deferred compensation, general and administrative expenses as a percentage of total revenues decreased from 37% for 2000 to 35% for 2001.

*Financial and Other Income, Net.* Financial and other income, net increased 40% to approximately \$3.9 million for 2001 from approximately \$2.8 million for 2000. This increase was attributable to higher levels of cash and cash equivalents available from the aggregate proceeds of approximately \$35.5 million from the sale of our Series C preferred shares in July 2000, net of issuance expenses of \$487,000, and approximately \$51.1 million from the initial public offering of our shares on the Nasdaq National Market, net of issuance expenses of approximately \$6.4 million, in August 2000. Financial and other income, net as a percentage of total revenues decreased from 38% for 2000 to 34% for 2001.

### **Impact of Inflation and Currency Fluctuations**

We generate substantially all of our revenues in U.S. dollars but incur a significant portion of our expenses, principally salaries and related personnel expenses, in New Israeli Shekels, or NIS. As a result, we are exposed to the risk that the rate of inflation in Israel will exceed the rate of devaluation of the NIS in relation to the U.S. dollar or that the timing of this devaluation lags behind inflation in Israel. In addition, we are exposed to the risk that the U.S. dollar will be devalued against the NIS. We try to protect ourselves against this possibility by investing a portion of our cash in NIS deposits. While in recent years the rate of devaluation of the NIS against the dollar has exceeded the rate of inflation, which is a reversal from prior years, we cannot be sure that this reversal will continue. To date, we have not been materially affected by changes in the Israeli rate of inflation or the exchange rates of the NIS compared to the U.S. dollar. We do not currently use financial instruments for trading purposes and do not currently hold any derivative financial instruments that could expose us to significant market risk.

### **Liquidity and Capital Resources**

From our inception until the initial public offering of our Ordinary Shares in August 2000, we obtained financing primarily through private placements of equity securities, and, to a lesser extent, government grants and loans. Financing activities from private placements of preferred and ordinary shares, net of issuance costs, provided cash of

approximately \$14.8 million in 1998, approximately \$19,000 in 1999 and approximately \$35.5 million in 2000.

In August 2000, we sold 5,000,000 of our ordinary shares in the initial public offering of our shares on the Nasdaq National Market, and in September 2000, we sold an additional 750,000 ordinary shares upon the exercise by our underwriters of their over-allotment option. Our aggregate consideration from these sales was \$57.5 million (\$51.1 million net of issuance expenses). All outstanding preferred shares were converted into Ordinary Shares upon the closing of the public offering.

Net cash used in operating activities was approximately \$6.1 million in 2000, approximately \$9.0 million in 2001, and approximately \$9.1 million in 2002. These amounts were used to fund our net losses for these periods, adjusted for non-cash expenses and changes in operating assets and liabilities.

Net cash used in investing activities consists of purchase of marketable securities, purchases of short-term and long-term deposits, purchases of property and equipment, and proceeds from redemption of marketable securities. Net cash provided by (used in) investing activities was approximately \$(12.1) million in 2000, \$(63.4) million in 2001, and \$5.8 million in 2002. The increase in net cash provided by investing activities in 2002 is mainly related to the proceeds of approximately \$9.2 million received from short-term and long-term deposits, the investment of approximately \$15.9 million in marketable securities, and the proceeds from sale of marketable securities, of approximately \$13.9 million.

\_\_\_\_(38)\_\_\_\_

Our net cash provided by financing activities was approximately \$87.4 million in 2000, approximately \$104,000 in 2001, and approximately \$161,000 in 2002. The principal sources of cash in 2000 were derived from the private placement of our preferred shares and issuance of Ordinary Shares in our initial public offering, and in 2001 and 2002, proceeds from issuance of Ordinary Shares related to employee option exercises.

As of December 31, 2002, we had cash and cash equivalents, short-term cash deposits and marketable securities of approximately \$48.4 million, and long-term marketable securities of approximately \$18.9 million. We believe that our existing cash and cash equivalents, short-term cash deposits and short-term and long-term marketable securities will be sufficient to fund our operations for at least the next two years. However, we may need additional equity or debt financing in the future to fund our operations or to finance potential acquisitions of other businesses, products or technologies.

### **Off-Balance Sheet Arrangements**

We do not have any off-balance-sheet arrangements.

### **Corporate Tax Rate**

Israeli companies are generally subject to income tax at the corporate tax rate of 36%. However, several investment programs at our manufacturing facility in Tel Aviv have been granted approved enterprise status and we are, therefore, eligible for the reduced tax benefits under the Law for the Encouragement of Capital Investments, 1959. We have derived, and expect to continue to derive, a substantial portion of our income from the approved enterprise programs at our manufacturing facility. Subject to compliance with applicable requirements, the portion of our income derived from the approved enterprise programs will be tax-exempt for a period of two years commencing in the first year in which it generates taxable income and will be subject, for a period of five to eight years, to a reduced corporate tax of up to 25%, depending on the percentage of non-Israeli investors who acquire our ordinary shares. The period of tax benefits with respect to our approved enterprise programs has not yet commenced, because we have yet to realize taxable income. These benefits should result in income recognized by us being tax exempt or taxed at a lower rate for a specified period after we begin to report taxable income and exhaust any net operating loss carry-forwards. However, these benefits may not be applied to reduce the tax rate for any income derived by our U.S. subsidiary. The law prescribing the benefits was terminated in May 2003. There can be no assurance that such tax benefits will continue in the future at their current levels or otherwise.

As of December 31, 2002, our net operating loss carry-forwards for Israeli tax purposes, including Evogene Ltd., amounted to approximately \$34 million. Under Israeli law, these net-operating losses may be carried forward

indefinitely and offset against certain future taxable income.

As of December 31, 2002, the net operating loss carry-forwards of our U.S. subsidiary for U.S. tax purposes amounted to approximately \$15.0 million. These losses are available to offset any future U.S. taxable income of our U.S. subsidiary and will expire between the years 2012 and 2022.

On January 1, 2003 a comprehensive tax reform took effect in Israel, that could adversely affect the Company's effective tax rate. See "Israeli Tax Considerations" under "Item 10 - Additional Information."

### **Research and Development, Patents and Licenses**

We invest heavily in research and development, both with respect to our core activities in human health, and in the broadening of our technological base. We believe that our future success will depend upon our ability to maintain technological leadership, to enhance existing technologies and products, and to introduce new technologies addressing our own needs and those of our customers. Therefore, research and development expenses continue to be the major expenditure of the company, and represented more than 50% of the total operating expenses for each of 2000, 2001 and 2002. As of December 31, 2002, 102 of our employees were engaged in research and development on a full-time basis. Our research and development expenses were \$14.2 million in 2002 compared to \$16.0 million in 2001, and \$12.6 million in 2000.

\_\_\_\_(39)\_\_\_\_

*Israeli Government Research and Development*

We participate in programs offered by the Office of the Chief Scientist of Israel ("OCS") that support research and development activities. We received or accrued participations from the OCS of approximately, \$466,000 in 2000, approximately \$994,000 in 2001, and approximately \$1.8 million in 2002.

We have received grants from the OCS for several projects. Under the terms of these grants, a royalty of 3% to 5% of the net sales of products developed from a project funded by the OCS must be paid, beginning with the commencement of sales of products developed with grant funds and ending when 100% of the dollar value of the grant is repaid (100% plus LIBOR interest for grants received from January 1, 1999 and afterwards). As of December 31, 2002, we were subject to the payment of approximately \$1.9 million in royalties to the OCS out of future net sales of products developed under OCS funded projects. The terms of Israeli government participation also require that the manufacture of products developed with government grants be performed in Israel, unless a special approval has been granted by the OCS. This approval, if granted, is generally subject to an increase in the total amount to be repaid to the OCS to between 120% and 300% of the amount granted, depending on the extent of the manufacturing to be conducted outside of Israel. A recent amendment to applicable law has provided that the restriction on manufacturing outside of Israel shall not apply to the extent that plans to so manufacture were disclosed when applying for funding. Separate Israeli government consent is required to transfer to third parties technologies developed through projects in which the government participates. Transfer to non-Israeli third parties is prohibited. A recent amendment to applicable law has specified that it is not just transfer of know-how that is prohibited, but also transfer of any rights in such know-how. These restrictions do not apply to exports from Israel of products developed with these technologies.

In addition to the OCS programs described above, we are a party to several consortia of Israeli research institutions and high technology companies devoted to the development of various generic technologies in the fields of biotechnology, agricultural biotechnology and pharmaceuticals. The OCS MAGNET program sponsors these consortia. Under the terms of the MAGNET program, the OCS contributes 66% of the approved budget of the consortium and the members of the consortium contribute the remaining 34%. No royalties are payable to the OCS with respect to this funding. Expenses in excess of the approved budget are borne by the consortium members.

In general, any member of the consortium that develops technology in the framework of the consortium retains the intellectual property rights to this technology and all other members of the consortium have the right to use and implement this technology without having to pay royalties to the developing consortium member, provided that the technology will not be transferred under any circumstances to any entity outside of the consortium. None of the other members of these consortia is currently a direct competitor of ours. The terms of the program prohibit the manufacture of products using technology developed in the context of the program outside of Israel and the transfer of technology developed under the program to any person, without the prior written consent of the OCS. These restrictions do not apply to the sale or export from Israel of products developed based on this know-how.

**Trend Information**

There is a trend towards consolidation in the pharmaceutical and biotechnology industries. This trend may negatively affect us in several ways. These consolidations usually involve larger companies acquiring smaller companies, which results in the remaining large companies having greater financial resources and technological capabilities, thus making competition in the industry more intense. Continued consolidation within the pharmaceutical and biotechnology industries may result in fewer customers for our products and services. In addition, if one of the parties to a consolidation uses the products or services of our competitors, we may lose existing customers as a result of such consolidation.

Another trend in our industries involves the large amount of data which is becoming available to the general public. To date, most of the public efforts relating to genomics involved producing data under the Human Genome Project. Following the publication of the first draft of the human genome, there has been an increase in public efforts to develop analysis tools for understanding genomic, functional genomic and proteomic data. These efforts may result in the development of tools which are competitive to ours and available for free. Such developments could require us to lower our prices or cause some of our products to be less commercially viable or to be obsolete.

\_\_\_\_(40)\_\_\_\_



Due to the downturn in the securities markets worldwide during the past three years, including in the stock of biotechnology companies, biotechnology companies, including current and potential customers of ours, may experience difficulties in raising additional financing required to effectively operate and grow their businesses. If some of our current or potential customers are unable to raise such financing, they may be unable or less willing to expend the amounts required to purchase our products and services. As a result, we may lose potential sales or may be forced to lower our prices. This could negatively impact our business, financial condition and results of operations.

\_\_\_\_(41)\_\_\_\_

**ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES****Directors and Senior Management**

The following sets forth information with respect to our directors and executive officers as of April 30, 2003.

<u>Name</u>	<u>Age</u>	<u>Positions</u>
Martin S. Gerstel	61	Chairman of the Board of Directors
Mor Amitai, Ph.D	37	Chief Executive Officer, President and Director
David Haselkorn, Ph.D	58	Director
Rimon Ben Shaul	58	Director
Orna Berry, Ph.D	53	Director
David Schlachet	57	Director
Nurit Benjamini	36	Chief Financial Officer
Erez Chimovits	39	Executive Vice President, Marketing & Sales and President, BioApplications
Michal Preminger, Ph.D.	39	Vice President, New Research Directions
Kinneret Savitsky, Ph.D.	36	Vice President, Experimental Biology
Dror Ofer, Ph.D.	40	Chief Technology Officer, Computational Chemistry and Drug Design
Dorit Bitter	35	Vice President, Research and Development, BioApplications

**Martin S. Gerstel** has served as our Chairman since August 1997. From September 1993 until August 1997, Mr. Gerstel was an independent consultant and lecturer and served on various boards of directors. From July 1987 until August 1993, he was Co-Chairman and Chief Executive Officer of Alza Corporation in Palo Alto, California. Mr. Gerstel is co-chairman of Itamar Medical Ltd. and serves on the board of directors of Symyx Corporation. He also serves on the Board of Governors and Executive committee of the Weizmann Institute of Science, and he is an advisor to the U.S.-Israel Binational Industrial Research and Development Foundation. Mr. Gerstel is obligated to devote at least 50% of his time to our affairs. Mr. Gerstel holds a B.S. in Engineering from Yale University and an M.B.A. from Stanford University.

**Mor Amitai, Ph.D.** joined Compugen in November 1994 as Chief Scientist, was promoted to Head of Research at the end of 1995, has served as our Chief Executive Officer and a director since January 1998 and received the title of President in 2000. Prior to joining us, Mr. Amitai had served as an engineer at Comverse Technologies since August 1991. Mr. Amitai holds a B.Sc. in Mathematics and Physics, and a M.Sc. and a Ph.D. in Mathematics, each from Hebrew University.

**David Haselkorn, Ph.D.** has served as a director since December 1998. Since 1998, Dr. Haselkorn has been the Chief Executive Officer of Clal Biotechnology Industries Ltd. From 1987 to 1998, Dr. Haselkorn served as a Managing Director and Chief Operating Officer of Bio-Technology General Corp. Dr. Haselkorn is also on the board of directors of several privately-held companies. Dr. Haselkorn holds a B.Sc. in Chemistry and an M.Sc. in Biochemistry from Hebrew University, and a Ph.D. in Chemical Immunology from the Weizmann Institute of Science.

**Rimon Ben Shaul** has been Co-Chairman, President and Chief Executive Officer of Koonras Technologies Ltd., an investment company controlled by Poalim Investments Ltd. since February 2001. From June 1997 to February 2001, he was President and Chief Executive Officer of Clal Industries and Investments Ltd., one of Israel's largest holding companies. During that period, Mr. Ben-Shaul also served on the Boards of Directors of Clal (Israel) Ltd. and several of its subsidiaries. From 1985 to June 1997, Mr. Ben-Shaul was President and Chief Executive Officer of Clal Insurance Company Ltd. and a member of its Board of Directors, and Chairman or member of the Board of Directors of various subsidiaries of Clal Insurance Company Ltd. He holds a B.A. in economics and an MBA from Tel Aviv University.

\_\_\_\_(42)\_\_\_\_

**Orna Berry, Ph.D** joined our Board as an outside director in June 2001. She is a Venture Partner at Gemini Israel Funds, and the Chairperson at Lambda Crossing, Ltd. and at Riverhead Inc. From 1997 to 2000, she was the Chief Scientist of the Ministry of Industry and Trade of the Government of Israel. Dr. Berry was the co-founder of ORNET Data Communication Technologies Ltd.. She served as the Chief Scientist of Fibronics and as a senior research engineer in several companies, including IBM and UNISYS. Dr. Berry received her Ph.D. in computer science from the University of Southern California and her M.A. and B.A. degrees in statistics and mathematics from Tel Aviv and Haifa Universities, respectively. Dr. Berry serves as an outside director on our Board for a fixed term, which expires in June 2004.

**David Schlachet** joined our Board as an outside director in June 2001. He is a managing partner of BioCom Management and Investment (2002) Ltd, which serves as the managing company of Biocom venture capital fund, focused on life sciences. He also serves on the Boards of Directors of the following companies: Poalim Capital Markets & Investments Ltd., Harel Capital Markets Ltd (as Chairman), Taya Investment Company Ltd., United Studios Ltd., Pharmos Ltd., Taldor Ltd., ProSeed Venture Capital Fund Ltd and Israel Discount Bank Limited. From 1997 to July 2000, he was Chairman of the Board of Directors of Elite Industries Ltd. From 1996 to January 2000, Mr. Schlachet served as Vice President of the Strauss Group of companies. From 1990 to 1996, he was Vice President, Finance and Administration at the Weizmann Institute of Science. From 1989 to 1990, Mr. Schlachet was Chief Executive Officer of Yeda Research and Development Ltd. of the Weizmann Institute of Science. From 1974 to 1988, he was a senior manager at the Investment Company of Bank Hapoalim Ltd. Mr. Schlachet holds a B.Sc. degree in chemical engineering from the Technion, Israel Institute of Technology and an MBA degree from Tel Aviv University.

**Nurit Benjamini** joined Compugen as Vice President Finance and Investor Relations in April 2000, and was promoted to Chief Financial Officer in December 2000. Prior to joining Compugen, she served as the Chief Financial Officer of Phone-Or Ltd., from 1998 to 2000, and of Aladdin Knowledge Systems Ltd. (NASDAQ: ALDN) from 1993 and 1998. Previously, Ms. Benjamini served as Chief Financial Analyst and Economist with Cubital Ltd, and as an economist on the Tel Aviv Stock Exchange. Ms. Benjamini holds a BA in Economics and Business and an MBA in Finance from Bar Ilan University, Israel.

**Erez Chimovits** joined Compugen as Director of Marketing & Sales in 1999, was promoted to Vice President Marketing & Sales Compugen Inc. in June 2001, and was promoted to Executive Vice President, Marketing & Sales and President, BioApplications Division in August 2001. Prior to joining Compugen, Mr. Chimovits held various positions in business development, marketing and sales at Saifan Ltd. Mr. Chimovits holds a B.Sc. in Molecular Biology, an M.Sc. in Human Genetics and an MBA, all from Tel Aviv University, Israel.

**Michal Preminger, Ph.D.** joined Compugen as Director of Business Development in 1998 and was promoted to Vice President of Business Development in 2000 and since August 2001 has served as Compugen's Vice President of New Research Directions. Prior to joining Compugen, Dr. Preminger served as Director of Marketing and Business Development at Lucent Technologies. Prior to her position at Lucent, she served in a senior marketing management position at the LANNET division of Madge Networks. Dr. Preminger holds a Ph.D. in Biological Sciences from the Weizmann Institute of Science, Department of Membrane Research and Biophysics in Israel, and an MBA from

INSEAD in France. She holds a Bachelor of Medicine from the Hadassah Medical School, Hebrew University in Jerusalem, and an M.Sc., Biological Sciences, from the Weizmann Institute of Science.

**Kinneret Savitsky, Ph.D.** joined Compugen in 1997 as a senior scientist in the Company`s newly founded laboratory. In 2000, she assumed her current position of Vice President, Experimental Biology within the Company. Dr. Savitsky completed her Ph.D. with distinction in the Department of Human Genetics at Tel Aviv University on the subject of identification of genes related to genetic diseases. Dr. Savitsky also holds a B.Sc. in Life Sciences with Honors from The Hebrew University, and an M.Sc. from the Department of Human Genetics at Tel Aviv University.

**Dror Ofer, Ph.D.** joined Compugen in 1998 as a research scientist and, in 2001, assumed his current position as Chief Technology Officer, Computational Chemistry and Drug Design within the Company. Prior to joining Compugen, Dr. Ofer served as a senior research physicist at a national laboratory. Dr. Ofer holds a B.Sc. in physics from The Hebrew University, an M.Sc. in physics from Ben-Gurion University and a Ph.D. in physics from The Weizmann Institute of Science.

\_\_\_\_(43)\_\_\_\_

**Dorit Bitter** joined Compugen in 2001, holding several senior positions in research and development before assuming her current position of Vice President, Research and Development, BioApplications in 2002. Prior to joining Compugen, Ms. Bitter worked at Cimatron, where she held various R&D management positions during her seven-year tenure at the company. Ms. Bitter earned a B.Sc. in mathematics and computer science and an M.Sc. in mathematics, both from The Hebrew University.

Mr. Amos Goren, Mr. Philip Young and Mr. Eli Mintz ceased to serve on our Board of Directors during 2002. Mr. Lior D. Ma`ayan`s employment with Compugen terminated in March 2003.

## **Compensation**

### *Compensation*

The aggregate compensation paid by us and our subsidiaries to all persons who served as directors or senior management for the year 2002 (12 persons) was \$1,537,790. This amount includes \$357,277 set aside or accrued to provide pension, severance, retirement or similar benefits. This amount also includes sums paid to Shomar Corporation under the consulting agreements which have been modified and that are further described under "Item 7. Major Shareholders and Related Party Transactions; Related Party Transactions and Consulting Agreement with Shomar Corporation".

During 2002, we granted a total of 370,000 options to purchase ordinary shares to our directors and senior management, as a group. These options are exercisable at a range of between \$1.38 and \$4.49 per share, and each expires ten years after their applicable date of grant. As of December 31, 2002, there were a total of 1,799,250 outstanding options to purchase ordinary shares that were granted to our directors and senior management, and 75,000 outstanding options that were granted to the members of our scientific advisory board.

All members of our board of directors who are not employees or consultants of the company are reimbursed for their expenses for each meeting attended and are eligible to receive share options under our share option plans. The aggregate amount paid to all of our non-employee directors for the year ended December 31, 2002 was approximately \$186,738. These fees are adjusted semi-annually to reflect changes prescribed by regulations under the Companies Law, for payment to outside directors. Members of our scientific advisory board receive cash compensation have been granted and may be granted further share options for their services.

## **Board practices**

*Election of Directors and Terms of Office*

Our board of directors currently consists of six members, including our chairman and chief executive officer. Other than our two outside directors, our directors are elected by an ordinary resolution at the annual general meeting of our shareholders. Unless they resign before the end of their term or are removed in accordance with our Articles of Association, all our directors other than our outside directors will serve as directors until our next annual general meeting of shareholders.

Dr. Orna Berry and Mr. David Schlachet serve as outside directors pursuant to the provisions of the Israeli Companies Law, 5759-1999 (the "Companies Law") for a three-year term ending in June 2004. After this date, their term of service may be renewed for one additional three-year term. None of our directors or officers has any family relationships with any other director or officer.

None of our directors is entitled to receive any severance or similar benefits upon termination of his or her service, except Dr. Mor Amitai who is entitled to severance as an employee, pursuant to the terms of his employment agreement.

Our Articles of Association permit us to hold officers' liability insurance and to indemnify our officers for actions performed on our behalf, subject to specified limitations.

### *Alternate Directors*

Our Articles of Association provide that a director may appoint, by written notice to us, any individual to serve as an alternate director, provided that the director is not currently serving as a director or as an alternate director. An alternate director will have the right to be paid, as well as all of the rights and obligations of the director appointing him or her, except the power to appoint an alternate, unless the instrument appointing him or her provides otherwise. The alternate director may not act at any meeting at which the director appointing him or her is present. Unless the time period or scope of any appointment is limited by the appointing director, the appointment is effective for all purposes, but will expire upon the expiration of the appointing director's term.

### *Outside and Independent Directors*

The Israeli Companies Law requires Israeli companies with shares that have been offered to the public in or outside of Israel to appoint two outside directors. No person may be appointed as an outside director if the person or the person's relative, partner, employer or any entity under the person's control, has or had, on or within the two years preceding the date of the person's appointment to serve as outside director, any affiliation with the company or any entity controlling, controlled by or under common control with the company. The term affiliation includes:

- an employment relationship;
- a business or professional relationship maintained on a regular basis;
- control; and
- service as an office holder.

No person may serve as an outside director if the person's position or business activities create, or may create, a conflict of interest with that person's responsibilities as an outside director or may otherwise interfere with his/her ability to serve as an outside director. If, at the time outside directors are to be appointed, all current members of the board of directors are of the same gender, then at least one outside director must be of the other gender.

Outside directors are to be elected by a majority vote at a shareholders' meeting, provided that either:

- the majority of shares voted at the meeting, including at least one-third of the shares held by non-controlling shareholders voted at the meeting, vote in favor of election of the director; abstaining votes shall not be counted in this vote, or
- the total number of shares held by non-controlling shareholders voted against the election of the director does not exceed one percent of the aggregate voting rights in the company.



The initial term of an outside director is three years and may be extended for an additional three years term. Outside directors may be removed only by the same percentage of shareholders as is required for their election, or by a court, and then only if the outside directors cease to meet the statutory qualifications for their appointment or if they violate their duty of loyalty to the company. Each committee of a company's board of directors must include at least one outside director.

An outside director is entitled to compensation as provided in regulations adopted under the Israeli Companies Law and is otherwise prohibited from receiving any other compensation, directly or indirectly, in connection with service provided as an outside director.

In addition, the Nasdaq National Market requires us to have at least two independent directors on our board of directors and to establish an audit committee, at least a majority of whose members are independent of management.

Dr. Orna Berry and David Schlachet currently serve as our outside directors under Israeli law and as our independent directors under Nasdaq requirements. They both serve on our audit committee.

\_\_\_\_(45)\_\_\_\_

### ***Audit Committee***

The Companies Law requires public companies to appoint an audit committee. The responsibilities of the audit committee include identifying irregularities in the management of the company's business and approving related party transactions as required by law. An audit committee must consist of at least three directors, including all of its outside directors. The chairman of the board of directors, any director employed by or otherwise providing services to the company, and a controlling shareholder or any relative of a controlling shareholder, may not be a member of the audit committee. An audit committee may not approve an action or a transaction with a controlling shareholder, or with an office holder, unless at the time of approval two outside directors are serving as members of the audit committee and at least one of the outside directors was present at the meeting in which an approval was granted.

Our audit committee is currently comprised of Dr. Orna Berry, David Schlachet and Rimon Ben-Shaul. Rimon Ben-Shaul serves as the Chairman of our Audit Committee.

### ***Internal Auditor***

Under the Companies Law, the board of directors must appoint an internal auditor, nominated by the audit committee. The role of the internal auditor is to examine, among other matters, whether the company's actions comply with the law and orderly business procedure. Under the Companies Law, the internal auditor may be an employee of the company but not an office holder (as defined above), or an affiliate, or a relative of an office holder or affiliate, and he or she may not be the company's independent accountant or its representative.

### ***Scientific Advisory Board***

Our scientific advisory board meets once or twice annually, and we consult with its individual members regularly. At its meetings, we review our primary ongoing and planned projects, and the advisory board recommends which projects to pursue and in what priority. Our scientific advisory board currently includes:

**Name**

**Affiliation**

Edgar Filing: COMPUGEN LTD - Form 20-F

Richard Durbin, Ph.D.	Head of Informatics, Deputy Director of the Wellcome Trust Sanger Institute, UK
C. Ronald Kahn, M.D.	President and Director, Joslin Diabetes Center;  Mary K. Iacocca Professor, Harvard Medical School, Boston, MA, USA
Joseph Schlessinger, Ph.D.	William H. Prusoff Professor and Chairman of the Department of Pharmacology of the Yale University School of Medicine; Member, National Academy of Sciences, USA
Arthur Weiss, M.D., Ph.D.	Ephraim P. Engleman Distinguished Professor of Rheumatology; Investigator, Howard Hughes Medical Institute, University of California, San Francisco, CA, USA

\_\_\_\_(46)\_\_\_\_

## Employees

The following table sets forth for the last three fiscal years, the number of our employees engaged in the specified activities, by geographic location.

<b>Year Ended December 31,</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>
<b>Research and Development and Engineering</b>			
Israel	109	108	105
U.S.	15	17	-
United Kingdom	1	-	
<b>Administration, Accounting and Operations</b>			
Israel	23	22	21
U.S.	3	4	2
<b>Sales, Marketing, Business Development and Support</b>			
Israel	8	12	17
U.S.	9	13	8
United Kingdom	2	-	-
<b>Total</b>	<b>170</b>	<b>176</b>	<b>168</b>

We and our Israeli employees are subject to provisions of the collective bargaining agreements between the Histadrut, the General Federation of Labor in Israel and the Coordination Bureau of Economic Organizations, including the Industrialists Associations, by order of the Israeli Ministry of Labor and Welfare. These provisions principally concern cost of living increases, recreation pay and other conditions of employment. We provide our employees with benefits and working conditions equal to or above the required minimum. Our employees are not represented by a labor union. We have written employment contracts with our employees and we believe that our relations with our employees are good.

**Share Ownership*****Share Ownership by Directors and Senior Management***

All of the persons listed above under the caption "Directors and Senior Management" own ordinary shares and/or options to purchase ordinary shares. Except as set forth below, none of the directors or executive officers owns shares and/or options amounting to 1% or more of the outstanding ordinary shares.

The following table sets forth certain information as of April 30, 2003, regarding the beneficial ownership by our directors and executive officers.

<b><u>Beneficial Owner</u></b>	<b><u>Amount Owned (**)</u></b>	<b><u>Percent of Class</u></b>
Martin S. Gerstel(1)	1,669,888	6.4%
Mor Amitai, Ph.D.(2)	700,778	2.7%
David Haselkorn, Ph.D. (3)	3,064,754	11.7%
Rimon Ben Shaul (4)	799,226	3.1%
Orna Berry, Ph.D.*		
David Schlachet*		
Erez Chimovits*		
Nurit Benjamini*		
Michal Preminger, Ph.D.*		
Kinneret Savitsky, Ph.D.*		
Dror Ofer, Ph.D.*		
Dorit Bitter*		
Directors and senior management as a group	6,681,728	25.5%

(1) Includes 550,000 shares held by Shomar Corporation, an affiliate of Mr. Gerstel, and 1,119,888 shares held by Merrill Lynch IRA for Martin Gerstel, of which Martin Gerstel is the beneficiary. Based on information provided by Mr. Martin Gerstel on March 17, 2003.

\_\_\_\_(47)\_\_\_\_

(2) Includes options to purchase 690,078 shares that are exercisable within 60 days of April 30, 2003.

(3) Ownership consists of options to purchase 15,915 that are exercisable within 60 days of April 30, 2003, 4,091 shares held by Clal Industries & Investments Ltd., and 3,041,748 shares held by Clal Biotechnology Industries, both affiliates of Dr. Haselkorn. Dr. Haselkorn's address is c/o Clal Biotechnology Industries Ltd., 3 Azrieli Center, Tel Aviv 67023, Israel.

(4) Ownership consists of options to purchase 10,641 shares that are exercisable within 60 days of April 30, 2003 and 788,585 shares held by Koonras Technologies Ltd., an affiliate of Mr. Ben Shaul. Mr. Ben Shaul's address is 21 Ha`arba`ah Street, Tel Aviv 64739, Israel.

(\*) Beneficially owns less than 1% of the Company's share capital.

(\*\*) All numbers quoted in the table above are inclusive of options to purchase shares, that are exercisable within 60 days of April 30, 2003.

### ***Share Option Plans***

We maintain the following share option plans for our and our subsidiaries' employees, directors and consultants. In addition to the discussion below, see Note 12 to our Consolidated Financial Statements.

Our board of directors administers our share option plans and has the authority to designate all terms of the options granted under our plans including the grantees, exercise prices, grant dates, vesting schedules and expiration dates, which may be no more than ten years after the grant date. Options may not be granted with an exercise price of less than the fair market value of our ordinary shares on the date of grant, unless otherwise determined by our board of directors.

*Compugen Ltd. Employee Share Option Plan (1996)*

We have granted options to purchase up to 559,750 ordinary shares to our employees and consultants under the Compugen Ltd. Employee Share Option Plan (1996). As of April 30, 2003, options to purchase 398,500 ordinary shares, granted at a weighted average exercise price of approximately \$1.87 per share, remained outstanding under the plan. Of these options, 344,250 were held by the directors and officers listed under "Directors and Senior Management" above. These options expire ten years after the date of grant or four weeks after termination of a grantee's employment or other relationship with us without cause. If we terminate the grantee for cause, the options expire immediately. We do not intend to grant additional options under this plan.

*Compugen Share Option Plan (1998)*

Under the Compugen Share Option Plan (1998), we have granted options to purchase up to 2,289,250 ordinary shares to employees, directors and consultants of Compugen and its subsidiaries. As of April 30, 2003, options to purchase 1,235,273 ordinary shares were outstanding under the plan at a weighted average exercise price of approximately \$2.05 per share. Options to purchase 637,758 ordinary shares under the plan have previously been exercised at an exercise price of approximately \$1.40, and options to purchase 626,969 ordinary shares remain available for future grant. If a grantee leaves his or her employment or other relationship with us, his or her unexercised vested options expire 90 days later.

*Compugen Share Option Plan (2000)*

Under the Compugen Share Option Plan (2000), we may grant options for up to an aggregate of 4,727,688 ordinary shares to our and our subsidiaries' employees, directors and consultants. This total number automatically increases every January 1 by the lesser of 1,500,000 shares or 4% of the total number of our then-outstanding shares, or such lower amount as shall be determined by the board of directors. If a grantee leaves his or her employment or other relationship with us, or if his or her relationship with us is terminated without cause, his or her unexercised options will expire 90 days later. As of April 30, 2003, options to purchase 2,993,654 ordinary shares were outstanding under the plan at a weighted average exercise price of approximately \$4.48 per share.

Options to purchase 5,592 ordinary shares under the plan have previously been exercised at an exercise price of approximately \$3.51, and options to purchase 1,728,442 ordinary shares remain available for future grant. In 2003, the terms of this plan have been modified slightly to allow for changes in the Israeli tax law.

Pursuant to the Tax Reform (See Item 10. Additional Information. Taxation. Israeli Tax Considerations. Tax Reform) and in order to comply with the provisions of Section 102 of the Income Tax Ordinance (Amendment No. 132), 5762-2002 (the "Ordinance"), on February 4, 2003 our board of directors adopted an addendum to our share option plan with respect to options granted as of January 1, 2003 to grantees who are residents of Israel (the "Addendum"). The Addendum does not add to nor modify our share option plan in respect of grantees that are not residents of Israel.

On February 4, 2003 the board of directors further resolved to elect the "Capital Gains Route" (as defined in Section 102(b)(2) of the Ordinance) for the grant of options to Israeli grantees. Generally, subject to the fulfillment of the provisions of Section 102 of the Ordinance, under the Capital Gains Route gains realized from the sale of shares issued upon exercise of options shall be taxed at a rate of 25% and not at the marginal income tax rate applicable to the grantee. The company will not be entitled to a tax deduction in an amount equal to the capital gain realized by the grantee. Neither the company, nor the grantee will be liable for any social taxes upon the sale of such shares.

#### *Non-Plan Options*

In 1996, we granted options to purchase a total of 249,250 ordinary shares to three of our employees. 133,847 of these options were forfeited without being exercised in November 1999. In addition, 54,663 of these options have been exercised to date. The terms of these options are the same as those granted under the Compugen Share Option Plan (1998).

#### *Directors` Options*

Prior to our initial public offering, we adopted a plan to grant options to our directors, effective as of the closing of our initial public offering. Pursuant to such plan, effective as of the closing of our initial public offering, we granted options to purchase 20,000 ordinary shares at an exercise price of \$10.00 per share to each of our directors (serving on our board on the date of the closing of our initial public offering) who were not employees or consultants. Of these options, options to purchase 1,250 ordinary shares vest at the end of every three-month period following the date of grant. Pursuant to this plan, we also grant each new non-employee director options to purchase 20,000 ordinary shares at the time he or she becomes a director. Of these options, options to purchase 5,000 ordinary shares vest on the first anniversary of the grant date, and options to purchase 1,250 ordinary shares vest at the end of every three-month period afterwards. In addition, pursuant to the plan, we grant each director options to purchase an additional 5,000 ordinary shares on each anniversary of the initial date of grant of options to such director. Of these options, options to purchase 1,250 ordinary shares vest at the end of every three-month period during the fourth year after the date of



grant. All of the options described above have been and will be granted under, and subject to, the terms of share option plans of Compugen in effect on the date of the grant of the option.

On September 3, 2002 our shareholders approved the following grants to Dr. David Haselkorn: (i) the grant of options to purchase 2,000 ordinary shares, and (ii) upon each anniversary of said grant, the grant of additional options to purchase 2,000 ordinary shares, subject to Dr. Haselkorn's continued provision of service to Compugen. The options shall vest over a four-year period. The exercise price of the first 2,000 options is \$1.38 per share. The exercise price for the other options shall be equal to the fair market value of Compugen's shares on the date of each grant.

On September 3, 2002 our shareholders approved the following grants to our Board members: (i) each audit committee member shall be entitled to an annual grant of options to purchase 2,000 ordinary shares, (ii) each executive committee member shall be entitled to an annual grant of options to purchase 2,000 ordinary shares, and (iii) in addition to the previous grants, the chairmen of the Audit Committee and the Executive Committee respectively, shall each be granted additional options to purchase 2,000 ordinary shares, each year. All of these options shall vest over a four-year period. As of April 30, 2003, 8,000 of these options have been granted to our directors, at an exercise price of \$1.38 per share. The rest of these options shall be granted at the exercise price equal to the fair market value of Compugen's shares, at the time of grant.

\_\_\_\_(49)\_\_\_\_

**ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS****Major Shareholders**

The following table sets forth certain information regarding beneficial ownership of our ordinary shares as of April 30, 2003 by each person who is known by us to own beneficially more than 5% of our outstanding ordinary shares. The voting rights of our major shareholders do not differ from the voting rights of other holders of our ordinary shares.

<b><u>Beneficial Owner</u></b>	<b><u>Number of Ordinary Shares</u></b> <b><u>Beneficially Owned</u></b>	<b><u>Percent of</u></b> <b><u>Ownership</u></b>
-		
Martin Gerstel (1)	1,669,888	6.4%
David Haselkorn Ph.D.(2)	3,064,754	11.7%
Clal Biotechnology Industries Ltd.(3)	3,041,748	11.6%
Apax (OCS) Nominees Limited	1,384,615	5.3%

(1) Includes 550,000 shares held by Shomar Corporation, an affiliate of Mr. Gerstel, and 1,119,888 shares held by Merrill Lynch IRA for Martin Gerstel, of which Martin Gerstel is the beneficiary. Based on information provided by Mr. Martin Gerstel on March 17, 2003.

(2) Ownership consists of options to purchase 15,915 that are exercisable within 60 days of April 30, 2003, 4,091 shares held by Clal Industries & Investments Ltd. and 3,041,748 shares held by Clal Biotechnology Industries, both affiliates of Dr. Haselkorn. Dr. Haselkorn's address is c/o Clal Biotechnology Industries Ltd., 3 Azrieli Center, Tel Aviv 67023, Israel.

(3) The address of Clal Biotechnology Industries Ltd. is 3 Azrieli Center, Tel Aviv 67023, Israel. David Haselkorn, Ph.D. the member of our board of directors who is affiliated with Clal Biotechnologies Industries Ltd., may be deemed to be the natural person with voting or investment control over the shares held by this entity.

As of April 30, 2003, there were a total of 156 holders of record of our ordinary shares, of which 84 were registered with addresses in the United States. Such United States holders were, as of such date, the holders of record of approximately 75.326% of the outstanding ordinary shares.

## **Related Party Transactions**

It is our policy to enter into transactions with related parties on terms that, on the whole, are no less favorable than those that would be available from unaffiliated parties. Based on our experience in the business segments in which we operate and the terms of our transactions with unaffiliated third parties, we believe that all of the transactions described below met our policy standards at the time they occurred.

### ***Evogene Ltd.***

In October 1999, we formed a division focusing on agricultural biotechnology and plant genomics. On January 1, 2002, we spun-off the business of this division into a majority-owned subsidiary, Evogene Ltd. in which Compugen holds 1,640,000 ordinary shares, representing 82% of Evogene`s outstanding share capital. On January 6, 2003, a group of investors, led by Martin Gerstel, the Chairman of our board of directors, extended to Evogene Ltd. a loan, convertible into equity, in the amount of \$2,000,000. Compugen did not participate in this financing round. In connection with this convertible loan, Compugen agreed to (1) forgo the entire loan that it extended to Evogene upon Evogene`s incorporation, in the amount of \$900,000 plus all accrued interest, and (2) extend until December 31, 2005 the term of the license to use Compugen`s computational tools free of charge, that was granted to Evogene upon Evogene`s incorporation. Additionally, in connection with the convertible loan, Compugen (and the founders of Evogene) agreed to grant to the lenders a proxy to vote fifty percent (50%) of their shares in Evogene. Compugen also waived, in connection with the convertible loan, its right to appoint the majority of the directors in Evogene, and it now has the right to appoint only two out of the six directors in Evogene. The convertible loan was extended by new lenders after Compugen determined that it does not wish to invest additional capital or resources in Evogene, as Evogene`s business is outside the scope of Compugen`s strategic focus of developing technologies in the field of human health.

\_\_\_\_(50)\_\_\_\_

### ***Private Placement of Series C Preferred Shares***

We issued 5,538,462 Series C preferred shares on July 17, 2000 at a purchase price of \$6.50 per share, to Apax Partners & Co., Pequot Private Equity Fund II, L.P., Clal Biotechnology Industries Ltd., Evergreen Canada - Israel Management and certain of its affiliates, and Israel Growth Fund L.P. and certain of its affiliates, some of which were shareholders of Compugen at the time of issuance. Upon the closing of the initial public offering of our ordinary shares, each Series C preferred share was converted into one ordinary share and all preferred rights granted to the series C preferred share holders expired, except the registration rights described below.

### ***Registration Rights***

Under the terms of the Investor Rights Agreement, the holders of registration rights are entitled to request that we effect the registration of their Compugen ordinary shares under the Securities Act. At the request of any holder of demand registration rights, we must use our best efforts to register at least 20% of the shares held by that holder if they are not freely tradable under the Securities Act. These demand rights may be exercised at least six months following any other registration of our shares. Certain groups of shareholders may only make one demand for us to register shares. Other of our shareholders and a warrant holder will have the right to include their shares in these registrations, subject to specified limitations.

At any time when we are eligible to register securities on Form F-3, subject to specified exceptions, the holders of registration rights will have the right to request that we register their ordinary shares that are not freely tradable under the Securities Act. The minimum aggregate offering price of the securities to be registered is at least \$500,000.

The holders of registration rights will also have the right to include their shares in any registration statements filed by us for purposes of a public offering, subject to specified limitations. An underwriter participating in an offering may limit the number of shares offered for marketing reasons, in which case the number of shares to be registered would be reduced pro rata among the holders requesting registration of their shares.

We will pay all expenses in connection with any registration, other than underwriting fees or discounts. These registration rights are transferable under specified circumstances and may be amended or waived only with our written consent and a specified number of the affected holders.

### ***Consulting Agreement with Shomar Corporation***

In October 1998, we entered into a two-year consulting agreement with Shomar Corporation, a company controlled by Martin S. Gerstel, our active Chairman of the Board of Directors. The agreement renews automatically each year unless terminated by either party. Under the agreement, as amended, Mr. Gerstel provides consulting services to us and is required to devote at least 50% of his business time to us. As compensation for his services under this agreement, we pay Shomar Corporation an annual consulting fee of \$150,000, plus reimbursement of Mr. Gerstel's reasonable out-of-pocket expenses. The agreement includes non-disclosure and non-competition obligations in our favor. In February 1999, our shareholders ratified our board's decisions to grant Shomar options to purchase an aggregate of 500,000 of our ordinary shares at a price of \$1.35 per share. All of these options have been exercised. In August 2001, our shareholders ratified our board's decision to pay Shomar Corporation a year-end bonus of \$15,000 for the year ended December 31, 2000. On April 29, 2003 our Board of Directors adopted a proposal, under which Shomar will waive the annual consulting fees of \$150,000 for the years 2003 - 2006, and Compugen will grant to Shomar Corporation options to purchase 250,000 ordinary shares of the Company, under the terms of our 2000 Option Plan. This proposal must be approved by our shareholders. Except for the aforesaid remuneration and for remuneration that all of our non-employee directors receive (which is the maximum amount payable to external directors in accordance with the Companies Law), Mr. Gerstel does not receive any other compensation for his services to us.

\_\_\_\_(51)\_\_\_\_

## ITEM 8. FINANCIAL INFORMATION

### Consolidated Statements and Other Financial Information

Our consolidated financial statements are incorporated herein by reference to pages F-1 through F-28.

### *Legal Proceedings*

Currently, we are not a party to any material pending legal proceedings. Except for the three sets of correspondence noted below, there are no legal proceedings pending or, to our knowledge threatened against us or our subsidiaries and we are not involved in any legal proceedings that our management believes, individually or in the aggregate, would have a material adverse effect on our business, financial conditions or operating results.

On March 10, 2002, we received a letter on behalf of Microsoft Corporation in which Microsoft claimed that our use of the trademark "Gencarta" infringes its rights in the trademark "Encarta". We agreed with Microsoft to resolve its claim by phasing out use of references to "Gencarta" and replacing these with references to "Genecarta".

On December 26, 2002, we received a letter from Oxford Gene Technology IP Ltd. ("OGT"), a company which has represented that it owns a number of patents in the microarray field. OGT enquired whether our activities in making and selling our OligoLibraries product infringes any of the OGT patents. We are not in the business of making or selling microarrays. Our OligoLibraries may be used for the purpose of making microarrays, amongst a range of other things. By a letter dated March 12, 2003 from OGT to us, OGT acknowledged that we are not in the business of manufacturing microarrays, and queried whether we offer products or services that could comprise components of OGT's patented inventions. Compugen continues to assess the merits of OGT's claims. The parties are now corresponding for the purpose of identifying whether the Company manufactures or sells any products which is of concern to OGT.

On February 24, 2003, we received a letter on behalf of the Carnegie Institution of Washington, ("Carnegie"), which claims to own a patent regarding certain RNAi technology. Carnegie is enquiring whether the Company may require a license from it in relation thereto.

If Microsoft and/or OGT and/or Carnegie were to institute litigation against us, the cost of such litigation, if instituted, could be substantial whether or not the Company prevails.

***Dividend Distributions***

We have never paid any cash dividends on our ordinary shares and we do not intend to pay cash dividends on our ordinary shares in the foreseeable future. Our current policy is to retain earnings for use in our business.

In the event that we decide to pay a cash dividend from income that is tax exempt under our approved enterprise status, we would be liable for corporate tax on the amount distributed at the rate of up to 25%. See Note 15 to our Consolidated Financial Statements and "Item 10. Taxation". Cash dividends may be paid by an Israeli company only out of retained earnings as calculated under Israeli law.

**Significant Changes**

No significant changes have occurred since the date of the consolidated financial statements included in this annual report

\_\_\_\_(52)\_\_\_\_

**ITEM 9. THE OFFER AND LISTING***Markets and Share Price History*

The primary trading market for our ordinary shares is the Nasdaq National Market, where our shares have been listed and traded on the under the symbol "CGEN" since our initial public offering in August, 2000. Our shares have also been traded on the Tel Aviv Stock Market under the symbol "CGEN" since January 7, 2002. The following table sets forth, for the periods indicated, the high and low reported sales prices of the ordinary shares on the Nasdaq National Market and on the Tel Aviv Stock Exchange:

<b>Last Six Calendar Months</b>	<b>Nasdaq</b>		<b>TASE</b>	
	<b>High</b>	<b>Low</b>	<b>High</b>	<b>Low</b>
May 2003	\$4.620	\$2.450	\$4.539	\$2.452
April 2003	\$2.660	\$1.750	\$2.702	\$1.866
March 2003	\$2.100	\$1.500	\$1.894	\$1.506
February 2003	\$2.060	\$1.550	\$2.258	\$1.790
January 2003	\$2.490	\$1.690	\$2.629	\$1.632
December 2002	\$2.250	\$1.340	\$2.197	\$1.341
<b>Financial Quarters During the Past Two Years</b>				
First Quarter 2003	\$2.490	\$1.500	\$2.629	\$1.506
Fourth Quarter 2002	\$2.250	\$0.910	\$2.197	\$0.894
Third Quarter 2002	\$2.260	\$1.000	\$2.268	\$1.129
Second Quarter 2002	\$3.730	\$1.810	\$4.160	\$1.947
First Quarter 2002	\$5.240	\$3.130	\$6.335	\$3.212
Fourth Quarter 2001	\$4.950	\$2.600	--	--
Third Quarter 2001	\$4.700	\$2.760	--	--
<b>Full Financial Years During the Past Five Years</b>				
2002	\$5.240	\$0.910	\$6.335	\$0.894
2001	\$8.625	\$2.600	--	--
2000 commencing August 11, 2000	\$19.500	\$5.063	--	--



## **ITEM 10. ADDITIONAL INFORMATION**

### **Memorandum and Articles of Association**

#### *Objects and Purposes of the Company*

We are registered under the Israel Companies Law as a public company with the name Compugen Ltd. and registration number 51-177-963-9. The objective stated in our articles of association is to engage in any lawful activity.

#### *Powers of the Directors*

Pursuant to the Companies Law and our articles of association, a director is not permitted to vote on a proposal, arrangement or contract in which he or she has a personal interest. Also, the directors may not vote compensation to themselves or any members of their body without the approval of our audit committee and our shareholders at a general meeting. The requirements for approval of certain transactions are set forth above in "Item 6. Directors, Senior Management and Employees; Directors and Senior Management; Approval of Certain Transactions". The powers of our directors to enter into borrowing arrangements on our behalf is limited to the same extent as any other transaction by us.

#### *Approval of Certain Transactions*

The Companies Law codifies the fiduciary duties that office holders, including directors and executive officers, owe to a company. An office holder, as defined in the Companies Law, is a director, general manager, chief business manager, deputy general manager, vice general manager, executive vice president, vice president, other manager directly subordinate to the managing director or any other person assuming the responsibilities of any of the foregoing positions without regard to such person's title. An office holder's fiduciary duties consist of a duty of care and a duty of loyalty. The duty of loyalty includes avoiding any conflict of interest between the office holder's position in the company and his personal affairs, avoiding any competition with the company, avoiding exploiting any business opportunity of the company in order to receive personal advantage for himself or others, and revealing to the company any information or documents relating to the company's affairs which the office holder has received due to his position as an office holder. Each person listed in the table under "Directors and Senior Management" above is an office holder of Compugen. Under the Companies Law, all arrangements as to compensation of office holders who are

not directors require approval of the board of directors, or a committee thereof. Arrangements regarding the compensation of directors also require audit committee and shareholders approval, with the exception of compensation to outside directors in the amounts specified in the regulations discussed above.

The Companies Law requires that an office holder promptly discloses any personal interest that he or she may have and all related material information known to him or her, in connection with any existing or proposed transaction by the company. The disclosure must be made to our board of directors or shareholders prior to the meeting at which the transaction is to be discussed. In addition, if the transaction is an extraordinary transaction, as defined under the Companies law, the office holder must also disclose any personal interest held by the office holder's spouse, siblings, parents, grandparents, descendants, spouse's descendants and the spouses of any of the foregoing, or by any corporation in which the office holder is a five percent (5%) or greater shareholder, or holder of 5% or more of the voting power, director or general manager or in which he or she has the right to appoint at least one director or the general manager. An extraordinary transaction is defined as a transaction not in the ordinary course of business, not on market terms, or that is likely to have a material impact on the company's profitability, assets or liabilities.

In the case of a transaction which is not an extraordinary transaction, after the office holder complies with the above disclosure requirement, only board approval is required unless the Articles of Association of the company provides otherwise. The transaction must not be adverse to the company's interest. If the transaction is an extraordinary transaction, then, in addition to any approval required by the Articles of Association, the transaction must also be approved by the audit committee and by the board of directors, and under specified circumstances, by a meeting of the shareholders. An office holder who has a personal interest in a matter that is considered at a meeting of the board of directors or the audit committee may not be present at this meeting or vote on this matter.

The Companies Law applies the same disclosure requirements to a controlling shareholder of a public company, which is defined as a shareholder who has the ability to direct the activities of a company, other than in circumstances where this power derives solely from the shareholder's position on the Board or any other position with the company, and includes a shareholder that holds 25% or more of the voting rights if no other shareholder owns more than 50% of the voting rights in the company. Extraordinary transactions with a controlling shareholder or in which a controlling shareholder has a personal interest, and the terms of compensation of a controlling shareholder who is an office holder, require the approval of the audit committee, the board of directors and the shareholders of the company.

The shareholder approval must either include at least one-third of the disinterested shareholders who are present, in person or by proxy, at the meeting, or, alternatively, the total shareholdings of the disinterested shareholders who vote against the transaction must not represent more than one percent of the voting rights in the company.

In addition, a private placement of securities that will increase the relative holdings of a shareholder that holds five percent or more of the company's outstanding share capital, assuming the exercise by such person of all of the convertible securities into shares held by that person, or that will cause any person to become a holder of more than five percent of the company's outstanding share capital, requires approval by the board of directors and the shareholders of the company. However, subject to certain exceptions, shareholder approval will not be required if the aggregate number of shares issued pursuant to such private placement, assuming the exercise of all of the convertible securities into shares being sold in such a private placement, comprises less than twenty percent of the voting rights in a company prior to the consummation of the private placement.

Under the Companies Law, a shareholder has a duty to act in good faith towards the company and other shareholders and refrain from abusing his power in the company, including, among other things, voting in the general meeting of shareholders on the following matters:

- . any amendment to the Articles of Association;
- . an increase of the company's authorized share capital;
- . a merger; or
- . approval of interested party transactions that require shareholder approval.

In addition, any controlling shareholder, any shareholder who knows it can determine the outcome of a shareholder vote and any shareholder who, under a company's Articles of Association, can appoint or prevent the appointment of an office holder, is under a duty to act with fairness towards the company. The Companies Law does not describe the substance of this duty. The Companies Law requires that specified types of transactions, actions and arrangements be approved as provided for in a company's articles of association and in some circumstances by the audit committee, by the board of directors and by the shareholders. In general, the vote required by the audit committee and the board of

directors for approval of these matters, in each case, is a majority of the disinterested directors participating in a duly convened meeting.

For information concerning the direct and indirect personal interests of some of our office holders and principal shareholders in transactions with us, see "Item 7. Major Shareholders and Related Party Transactions."

***Rights Attached to Ordinary Shares***

Our authorized share capital consists of 50,000,000 ordinary shares, par value NIS 0.01 per share. Holders of ordinary shares have one vote per share, and are entitled to participate equally in the payment of dividends and share distributions and, in the event of our liquidation, in the distribution of assets after satisfaction of liabilities to creditors. No preferred shares are currently authorized. All outstanding ordinary shares are validly issued and fully paid.

***Transfer of Shares and Notices***

Fully paid ordinary shares are issued in registered form and may be freely transferred under our Articles of Association unless the transfer is restricted or prohibited by another instrument. Our Articles of Association provide that each shareholder of record is entitled to receive at least 21 days' prior notice of any shareholders' meeting.

\_\_\_\_(55)\_\_\_\_

### ***Dividend and Liquidation Rights***

We may declare a dividend to be paid to the holders of ordinary shares according to their rights and interests in our profits. In the event of our liquidation, after satisfaction of liabilities to creditors, our assets will be distributed to the holders of ordinary shares in proportion to the nominal value of their holdings. This right may be affected by the grant of preferential dividend or distribution rights to the holders of a class of shares with preferential rights that may be authorized in the future. Pursuant to Israel's securities laws, a company registering its shares for trade on the TASE may not have more than one class of shares for a period of one year following registration, after which it is permitted to issue preference shares. Under the Companies Law, the declaration of a dividend does not require the approval of the shareholders of the company, unless the company's Articles of Association require otherwise. Our Articles of Association provide that the board of directors may declare and distribute dividends without the approval of the shareholders.

### ***Annual and Extraordinary General Meetings***

We must hold our annual general meeting of shareholders each year no later than 15 months from the last annual meeting, at a time and place determined by the board of directors, upon at least 21 days` prior notice to our shareholders. A special meeting may be convened by request of two directors or by written request of one or more shareholders holding at least 5% of our issued share capital and 1% of the voting rights or one or more shareholders holding at least 5% of the voting rights. Shareholders requesting a special meeting must submit their proposed resolution with their request. Within 21 days of receipt of the request, the Board must convene a special meeting and send out notices setting forth the date, time and place of the meeting. Such notice must be given at least 21 days but not more than 35 days prior to the special meeting.

The quorum required for a meeting of shareholders consists of at least two shareholders present in person or by proxy who hold or represent between them at least 33.3% of the issued share capital. A meeting adjourned for lack of a quorum generally is adjourned to the same day in the following week at the same time and place or any time and place as the directors designate in a notice to the shareholders. At the reconvened meeting, the required quorum consists of any two members present in person or by proxy.

### ***Voting Rights***

Our ordinary shares do not have cumulative voting rights in the election of directors. As a result, the holders of ordinary shares that represent more than 50% of the voting power represented at a shareholders meeting have the power to elect all of our directors, except the outside directors whose election requires a special majority as described

under the section entitled "Item 6. Directors, Senior Management and Employees; Board Practices; Outside and Independent Directors."

Holders of ordinary shares have one vote for each ordinary share held on all matters submitted to a vote of shareholders. Shareholders may vote in person or by proxy. These voting rights may be affected by the grant of any special voting rights to the holders of a class of shares with preferential rights that may be authorized in the future.

Under the Companies Law, unless otherwise provided in the Articles of Association or by applicable law, all resolutions of the shareholders require a simple majority and all shareholders' meetings require prior notice of at least 21 days. Our Articles of Association provide that all decisions may be made by a simple majority. See "Item 6. Directors, Senior Management and Employees; Directors and Senior Management; Approval of Certain Transactions" above for certain duties of shareholders towards the company.

*Limitations on the Rights to Own Securities*

The ownership or voting of ordinary shares by non-residents of Israel is not restricted in any way by our articles of association or the laws of the State of Israel, except that nationals of countries which are, or have been, in a state of war with Israel may not be recognized as owners of ordinary shares.

### ***Anti-Takeover Provisions under Israeli Law***

The Companies Law provides that an acquisition of shares in a public company must be made by means of a tender offer if as a result of the acquisition the purchaser would become shareholder with over 25% of the voting rights in the company. This rule does not apply if there is already another shareholder of the company with 25% or more of the voting rights. Similarly, the Companies Law provides that an acquisition of shares in a public company must be made by means of a tender offer if as a result of the acquisition the purchaser's shareholdings would entitle the purchaser to over 45% of the voting rights in the company, unless there is a shareholder with 50% or more of the voting rights in the company. These rules do not apply if the acquisition is made by way of a merger. Regulations promulgated under the Companies Law provide that these tender offer requirements do not apply to companies whose shares are listed for trading outside of Israel if, according to the law in the country in which the shares are traded, including the rules and regulations of the stock exchange or which the shares are traded, either:

- there is a limitation on acquisition of any level of control of the company; or
- the acquisition of any level of control requires the purchaser to do so by means of a tender offer to the public.

Finally, in general, Israeli tax law treats specified acquisitions less favorably than does U.S. tax law. However, Israeli tax law has recently been amended to provide for tax deferral in specified acquisitions, including transactions where the consideration for the sale of shares is the receipt of shares of the acquiring company, making Israeli tax consequences more favorable than they had been in the past for shareholders who exchange their ordinary shares for shares in a foreign corporation under certain circumstances.

### **Material Contracts**

#### ***Convertible Loan Agreement in Evogene Ltd.***

In December 2002 Evogene Ltd., our majority-owned subsidiary, entered into a Convertible Loan Agreement with a group of lenders, pursuant to which these lenders lent US \$2,000,000 to Evogene, at a pre-money valuation of the company of US \$2,000,000. For more information on this transaction see Item 7. Major Shareholders and Related Party Transactions. Related Party Transactions. Evogene Ltd.

### **Exchange Controls**

Under Israeli Law, Israeli non-residents who purchase ordinary shares with certain non-Israeli currencies (including dollars) may freely repatriate in such non-Israeli currencies all amounts received in Israeli currency in respect of the

ordinary shares, whether as a dividend, as a liquidating distribution, or as proceeds from any sale in Israel of the ordinary shares, provided in each case that any applicable Israeli income tax is paid or withheld on such amounts. The conversion into the non-Israeli currency must be made at the rate of exchange prevailing at the time of conversion.

## **Taxation**

The following discussion of Israeli and United States tax consequences material to our shareholders is not intended and should not be construed as legal or professional tax advice and does not exhaust all possible tax considerations. To the extent that the discussion is based on new tax legislation, which has not been subject to judicial or administrative interpretation, the views expressed in the discussion might not be accepted by the tax authorities in question.

**We urge shareholders and prospective purchasers of our ordinary shares to consult their own tax advisors as to the U.S., Israeli, or other tax consequences of the purchase, ownership and disposition of ordinary shares, including, in particular, the effect of any foreign, state or local taxes.**

\_\_\_\_(57)\_\_\_\_



### *Israeli Tax Considerations*

The following discussion refers to the current tax law applicable to companies in Israel, with special reference to its effect on us. This discussion also includes specified Israeli tax consequences to holders of our ordinary shares and Israeli Government programs benefiting us. To the extent that the discussion is based on new tax legislation that has not been subject to judicial or administrative interpretation, we cannot assure you that the views expressed in the discussion will be accepted by the tax authorities in question. The following discussion of Israeli tax considerations is not intended and should not be construed as legal or professional tax advice and does not exhaust all possible tax considerations.

### *Tax Reform*

On January 1, 2003 a comprehensive tax reform took effect in Israel. Pursuant to the reform, resident companies are subject to Israeli tax on income accrued or derived in Israel or abroad. In addition, the concept of controlled foreign corporation was introduced according to which an Israeli company may become subject to Israeli taxes on certain income of a non-Israeli subsidiary if the subsidiaries primary source of income is passive income (such as interest, dividends, royalties, rental income or capital gains). The tax reform also substantially changed the system of taxation of capital gains.

### *General Corporate Tax Structure*

Israeli companies are generally subject to company tax at the rate of 36% of taxable income. However, the effective tax rate payable by a company which derives income from an approved enterprise may be considerably less, as discussed further below.

### *Tax Benefits Under the Law for the Encouragement of Capital Investments, 1959*

The Law for the Encouragement of Capital Investment, 1959, as amended, commonly referred to as the Investment Law, provides that a proposed capital investment in eligible facilities may, upon application to the Investment Center of the Ministry of Industry and Trade of the State of Israel, be designated as an approved enterprise. Each certificate of approval for an approved enterprise relates to a specific investment program delineated both by its financial scope, including its capital sources, and by its physical characteristics, for example, the equipment to be purchased and utilized under the program. The tax benefits derived from any certificate of approval relate only to taxable income

attributable to the specific approved enterprise. If a company has more than one approval or only a portion of its capital investments is approved, its effective tax rate is the result of a weighted average of the applicable rates.

Taxable income of a company derived from an approved enterprise is subject to company tax at the maximum rate of 25%, rather than 36%, for the benefit period. This period is ordinarily seven years, or ten years if the company qualifies as a foreign investors' company as described below, commencing with the year in which the approved enterprise first generates taxable income. However, this period is limited to 12 years from commencement of production or 14 years from the date of approval, whichever is earlier.

A company owning an approved enterprise may elect to forego entitlement to grants otherwise available as a result of an approved enterprise in return for an alternative package of benefits. Under the alternative package of benefits, a company's undistributed income derived from an approved enterprise will be exempt from company tax for a period of between two and ten years from the first year of taxable income, depending on the geographic location of the approved enterprise within Israel, and the company will be eligible for a reduced tax rate for the remainder of the benefits period.

A company that has elected the alternative package of benefits and that subsequently pays a dividend out of income derived from the approved enterprise during the tax exemption period will be subject to tax on the amount distributed, including any Company tax on these amounts, at the rate which would have been applicable had it not elected the alternative package of benefits, generally 10%-25%, depending on the percentage of the company's shares held by foreign shareholders. The dividend recipient is taxed at the reduced rate applicable to dividends from approved enterprises, which is 15%, if the dividend is distributed during the tax exemption period or within 12 years after this period, or in the case of a foreign investors' company, without time limitation. The company must withhold this tax at source, regardless of whether the dividend is converted into or paid in foreign currency.

\_\_\_\_(58)\_\_\_\_

A company that has an approved enterprise program is eligible for further tax benefits if it qualifies as a foreign investors' company. A foreign investors' company is a company more than 25% of whose share capital and combined share and loan capital is owned by non-Israeli residents. A company which qualifies as a foreign investors' company and has an approved enterprise program is eligible for tax benefits for a ten-year benefit period. The company tax rate applicable to income earned from approved enterprise programs in the benefit period by a company meeting these qualifications is as follows:

<b><u>For a company with foreign investment of</u></b>	<b><u>Company Tax Rate</u></b>
Over 25% but less than 49%.....	25%
49% or more but less than 74%.....	20%
74% or more but less than 90%.....	15%
90% or more.....	10%

Subject to applicable provisions concerning income under the alternative package of benefits, all dividends are considered to be attributable to the entire enterprise and their effective tax rate is the result of a weighted average of the various applicable tax rates. Under the Investment Law, a company that has elected the alternative package of benefits is not obliged to distribute exempt retained profits, and may generally decide from which year's profits to declare dividends. We currently intend to reinvest any income derived from our approved enterprise programs and not to distribute the income as a dividend.

The Investment Center bases its decision whether or not to approve an application on the criteria set forth in the Investment Law and regulations, the then prevailing policy of the Investment Center, and the specific objectives and financial criteria of the applicant. Therefore, we cannot assure you that any applications we may make in the future will be approved. In addition, the benefits available to an approved enterprise are conditioned upon the fulfillment of conditions stipulated in the Investment Law and its regulations and in the criteria in the specific certificate of approval, as described above. If a company does not meet these conditions, it would be required to refund the amount of tax benefits, together with consumer price index linkage adjustment and interest.

The Investment Center has granted approved enterprise status to three of our investment programs. Taxable income derived from these programs will be tax exempt for a period of two years beginning with the year in which we first generate taxable income, and thereafter will be subject to a reduced tax rate of 25% or less, if we qualify as a foreign investors' company, for a period of between five and eight years, depending on the percentage of our capital held by non-Israeli shareholders. We have derived, and expect to continue to derive, a substantial portion of our revenues from our approved enterprise programs. To date, we have not generated taxable revenues, from our approved enterprise programs or otherwise.

Although the Law for the Encouragement of Capital Investment, 1959 provides that no new benefits may be granted after May 2003, we expect that this date could be extended, as has been the case in the past. There can be no assurances that new benefits will be available after May 2003. Since we have already been granted approved enterprise status under this Law, the deadline does not have any affect on such status or on the benefits we receive.

*Tax Benefits for Research and Development*

Israeli tax law allows, under specific conditions, a tax deduction in the year incurred for expenditures, including capital expenditures, relating to scientific research and development projects, if the expenditures are approved by the relevant Israeli government ministry, determined by the field of research, and the research and development is for the promotion of the company and is carried out by or on behalf of the company seeking the deduction. Expenditures not so approved are deductible over a three-year period. However, expenditures made out of proceeds made available to us through government grants are not deductible.

\_\_\_\_(59)\_\_\_\_

*Tax Benefits Under the Law for the Encouragement of Industry (Taxes), 1969*

The Law for the Encouragement of Industry (Taxes), 1969, generally referred to as the Industry Encouragement Law, provides several tax benefits for industrial companies. An industrial company is defined as a company resident in Israel, at least 90% of the income of which in a given tax year exclusive of income from specified government loans, capital gains, interest and dividends, is derived from an industrial enterprise owned by it. An industrial enterprise is defined as an enterprise whose major activity in a given tax year is industrial production activity.

Under the Industry Encouragement Law, industrial companies are entitled to a number of corporate tax benefits, including:

- deduction of purchase of know-how and patents over an eight-year period;
- deduction of certain share issuance expenses over a three-year period; and
- the right to elect, under specified conditions, to file a consolidated tax return with additional related Israeli industrial companies and an industrial holding company.

Under some tax laws and regulations, an industrial enterprise may be eligible for special depreciation rates for machinery, equipment and buildings. These rates differ based on various factors, including the date the operations begin and the number of work shifts. An industrial company owning an approved enterprise may choose between these special depreciation rates and the depreciation rates available to the approved enterprise.

Eligibility for benefits under the Industry Encouragement Law is not subject to receipt of prior approval from any governmental authority.

We believe that we currently qualify as an industrial company within the definition of the Industry Encouragement Law. We cannot assure you that we will qualify or, if we qualify, that we will continue to qualify as an industrial company or that the benefits described above will be available to us in the future.

*Special Provisions Relating to Taxation under Inflationary Conditions*

The Income Tax Law (Inflationary Adjustments), 1985, generally referred to as the Inflationary Adjustments Law, represents an attempt to overcome the problems presented to a traditional tax system by an economy undergoing rapid inflation. The Inflationary Adjustments Law is highly complex. Its features which are material to us can be described

as follows:

- there is a special tax adjustment for the preservation of equity which classifies corporate assets into fixed assets and non-fixed assets. Where a company's equity, as defined in the law, exceeds the depreciated cost of fixed assets, a deduction from taxable income that takes into account the effect of the applicable annual rate of inflation on the excess is allowed up to a ceiling of 70% of taxable income in any single tax year, with the unused portion permitted to be carried forward on a linked basis. If the depreciated cost of fixed assets exceeds a company's equity, then the excess multiplied by the applicable annual rate of inflation is added to taxable income.
- subject to specified limitations, depreciation deductions on fixed assets and losses carried forward are adjusted for inflation based on the increase in the consumer price index.
- in specified circumstances, gains on traded securities, which might otherwise be eligible for reduced rates of tax, will be liable to company tax at the rate of 36%.

*Capital Gains Tax on Sale of our Ordinary Shares*

Israeli law generally imposes a capital gains tax on the sale of capital assets located in Israel, including shares in Israeli resident companies, by both residents and non-residents of Israel, unless a specific exemption is available or unless a treaty between Israel and the country of the non-resident provides otherwise. Regulations promulgated under the Israeli Income Tax Ordinance provided for an exemption from Israeli capital gains tax for gains accrued before January 1, 2003 and derived from the sale of shares of an "Industrial Company", as defined by the Industry Encouragement Law, that are traded on specified non-Israeli markets, including The NASDAQ National Market, provided that the sellers purchased their shares either in the company's initial public offering or in public market transactions thereafter.

\_\_\_\_(60)\_\_\_\_

This exemption does not apply to shareholders who are in the business of trading securities, or to shareholders that are Israeli resident companies subject to the Income Tax (Adjustments for Inflation) Law- 1985. The Company believes that it is currently an Industrial Company, as defined by the Industry Encouragement Law. The status of a company as an Industrial Company may be reviewed by the tax authorities from time to time. There can be no assurance that the Israeli tax authorities will not deny the Company's status as an Industrial Company, possibly with retroactive effect.

On January 1, 2003, the Law for Amendment of the Income Tax Ordinance (Amendment No.132), 5762-2002, known as the tax reform, came into effect thus imposing capital gains tax at a rate of 15% on gains derived on or after January 1, 2003 from the sale of shares in Israeli companies publicly traded on a recognized stock exchange outside of Israel. This tax rate does not apply to: (1) dealers in securities; (2) shareholders that report in accordance with the Income Tax Law (Inflationary Adjustment) - 1985; or (3) shareholders who acquired their shares prior to an initial public offering. The tax basis of shares acquired prior to January 1, 2003 will be determined in accordance with the average closing share price in the three trading days preceding January 1, 2003. Non-Israeli residents shall be exempt from Israeli capital gains tax on any gains derived from the sale of shares publicly traded on a stock exchange recognized by the Israeli Ministry of Finance, provided such shareholders did not acquire their shares prior to an initial public offering. In any event, the provisions of the tax reform shall not affect the exemption from capital gains tax for gains accrued before January 1, 2003, as described in the previous paragraph and capital gains in respect of assets purchased prior to that date will be subject to a blended tax rate calculated based on the relative time periods before and after January 1, 2003. This is not true with respect to traded securities, where post-2002 gains are measured based on the closing prices at the end of 2002.

In addition, pursuant to the Convention Between the Government of the United States of America and the Government of Israel with Respect to Taxes on Income, as amended (the "United States- Israel Tax Treaty"), the sale, exchange or disposition of ordinary shares by a person who qualifies as a resident of the United States within the meaning of the United States-Israel Tax Treaty and who is entitled to claim the benefits afforded to such person by the United States- Israel Tax Treaty (a "Treaty United States Resident") generally will not be subject to the Israeli capital gains tax unless such "Treaty United States Resident" holds, directly or indirectly, shares representing 10% or more of the Company's voting power during any part of the twelve- month period preceding such sale, exchange or disposition, subject to certain conditions. However, under the United States-Israel Tax Treaty, such "Treaty United States Resident" would be permitted to claim a credit for such taxes against the United States federal income tax imposed with respect to such sale, exchange or disposition, subject to the limitations in United States laws applicable to foreign tax credits. The United States-Israel Tax Treaty does not relate to United States state or local taxes.

#### *Taxation of Non-Resident Holders of Shares*

Non-residents of Israel are subject to income tax on income accrued or derived from sources in Israel. These sources of income include passive income, including dividends, royalties and interest, as well as non-passive income from services rendered in Israel. On distribution of dividends other than bonus shares or stock dividends, income tax is withheld at source, at the rate of 25%, or 12.5% for dividends not generated by an approved enterprise if the non-resident is a U.S. corporation and holds at least 10% of our voting power, and 15% for dividends generated by an approved enterprise, unless in each case a different rate is provided in a treaty between Israel and shareholder's

country of residence. Under the U.S.-Israel tax treaty, the maximum tax on dividends paid to a holder of ordinary shares who is a U.S. resident will be 25%. However, under the Investment Law, dividends generated by an approved enterprise are taxed at the rate of 15%.

***United States Federal Income Tax Considerations***

The following discusses the material United States federal income tax consequences to a holder of our ordinary shares and qualifies as a U.S. Holder, which is defined as:

- a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, the District of Columbia, or any state;  
or
- a trust or estate, treated, for United States federal income tax purposes, as a domestic trust or estate.

\_\_\_\_(61)\_\_\_\_



This opinion is based on current provisions of the Internal Revenue Code of 1986 (the "Code"), as amended, current and proposed Treasury regulations promulgated under the Code, and administrative and judicial decisions as of the date of this prospectus, all of which are subject to change, possibly on a retroactive basis. This opinion does not address any aspect of state, local or non-United States tax laws.

Further, this opinion does not purport to be a comprehensive description of all of the tax considerations that may be relevant to U.S. Holders entitled to special treatment under United States federal income tax laws, for example, financial institutions, insurance companies, tax-exempt organizations and broker-dealers, and it does not address all aspects of United States federal income taxation that may be relevant to any particular shareholder based on the shareholder's individual circumstances. In particular, this opinion does not address the potential application of the alternative minimum tax, nor the special United States federal income tax rules applicable in special circumstances, including to U.S. Holders who:

- have elected mark-to-market accounting;
- hold our ordinary shares as part of a straddle, hedge or conversion transaction with other investments;
- own directly, indirectly or by attribution at least 10% of our voting power; and
- have a functional currency that is not the U.S. dollar.

Additionally, this opinion does not consider the tax treatment of partnerships or persons who hold ordinary shares through a partnership or other pass-through entity or the possible application of United States federal gift or estate taxes. Material aspects of United States federal income tax relevant to a holder other than a U.S. Holder are also described below.

#### ***Taxation of Dividends Paid On Ordinary Shares***

A U.S. Holder will be required to include in gross income as ordinary income the amount of any distribution paid on ordinary shares, including any Israeli taxes withheld from the amount paid, to the extent the distribution is paid out of our current or accumulated earnings and profits as determined for United States federal income tax purposes. Distributions in excess of these earnings and profits will be applied against and will reduce the U.S. Holder's basis in the ordinary shares and, to the extent in excess of this basis, will be treated as gain from the sale or exchange of ordinary shares.

Recently enacted amendments to the Code, as amended, provide that dividend income may be eligible for a reduced rate of taxation. Dividend income will be taxed at the applicable long-term capital gains rate if the dividend is received from a "qualified foreign corporation," and the shareholder of such foreign corporation holds such stock for more than 60 days during the 120 day period that begins on the date that is 60 days before the ex-dividend date for the stock. The holding period is tolled for any days on which the shareholder has reduced his risk of loss. A "qualified

foreign corporation" is one that is eligible for the benefits of a comprehensive income tax treaty with the United States. A foreign corporation will be treated as qualified with respect to any dividend paid, if its stock is readily tradable on an established securities market.

Distributions of current or accumulated earnings and profits paid in foreign currency to a U.S. Holder will be includible in the income of a U.S. Holder in a U.S. dollar amount calculated by reference to the exchange rate on the day the distribution is received. A U.S. Holder that receives a foreign currency distribution and converts the foreign currency into U.S. dollars subsequent to receipt will have foreign exchange gain or loss based on any appreciation or depreciation in the value of the foreign currency against the U.S. dollar, which will generally be U.S. source ordinary income or loss.

As described above, we will generally be required to withhold Israeli income tax from any dividends paid to holders who are not resident in Israel. See "Israeli Tax Considerations - Taxation of Non-Resident Holders of Shares." If a U.S. Holder receives a dividend from Compugen that is subject to Israeli withholding, the following would apply:

- You must include the gross amount of the dividend, not reduced by the amount of Israeli tax withheld, in your U.S. taxable income.
- You may be able to claim the Israeli tax withheld as a foreign tax credit against your U.S. income tax liability.

- The foreign tax credit is subject to significant and complex limitations. Generally, the credit can offset only the part of your U.S. tax attributable to your net foreign source passive income. Additional special rules apply to taxpayers predominantly engaged in the active conduct of a banking, insurance, financing or similar business. Additionally, if we pay dividends at a time when 50% or more of our stock is owned by U.S. persons, you may be required to treat the part of the dividend attributable to U.S. source earnings and profits as U.S. source income, possibly reducing the allowable credit, unless you elect to calculate your foreign tax credit separately with respect to Compugen dividends.
- A U.S. Holder will be denied a foreign tax credit with respect to Israeli income tax withheld from dividends received on the ordinary shares to the extent the U.S. Holder has not held the ordinary shares for at least 16 days of the 30-day period beginning on the date which is 15 days before the ex-dividend date or to the extent the U.S. Holder is under an obligation to make related payments with respect to substantially similar or related property. Any days during which a U.S. Holder has substantially diminished its risk of loss on the ordinary shares are not counted toward meeting the 16-day holding period required by the statute.
- If you do not elect to claim foreign taxes as a credit, you will be entitled to deduct the Israeli income tax withheld from your Compugen dividends in determining your taxable income. Individuals who do not claim itemized deductions, but instead utilize the standard deduction, may not claim a deduction for the amount of the Israeli income taxes withheld.
- If you are a U.S. corporation holding our stock, you cannot claim the dividends-received deduction with respect to our dividends.

Special rules, described below, apply if Compugen is a passive foreign investment company.

### ***Taxation of the Disposition of Ordinary Shares***

Subject to the description of the passive foreign investment company rules below, upon the sale, exchange or other disposition of our ordinary shares, a U.S. Holder will recognize capital gain or loss in an amount equal to the difference between the U.S. Holder's basis in the ordinary shares, which is usually the cost of these shares, and the amount realized on the disposition. If, as anticipated, the ordinary shares are publicly traded, a disposition of shares will be considered to occur on the trade date, regardless of the holder's method of accounting. Capital gain from the sale, exchange or other disposition of ordinary shares held more than one year is long-term capital gain and is eligible for a reduced rate of taxation for non-corporate holders. Gain or loss recognized by a U.S. Holder on a sale, exchange or other disposition of ordinary shares generally will be treated as United States source income or loss for United States foreign tax credit purposes. The deductibility of capital losses is subject to limitations for both corporate and individual shareholders.

A U.S. Holder that uses the cash method of accounting calculates the U.S. dollar value of the proceeds received from a sale of ordinary shares as of the date that the sale settles, and will generally have no additional foreign currency gain or loss on the sale, while a U.S. Holder that uses the accrual method of accounting is required to calculate the value of the proceeds of the sale as of the trade date and may therefore realize foreign currency gain or loss, unless the U.S. Holder has elected to use the settlement date to determine its proceeds of sale for purposes of calculating this foreign currency gain or loss. In addition, a U.S. Holder that receives foreign currency upon disposition of our ordinary shares and converts the foreign currency into U.S. dollars subsequent to receipt will have foreign exchange gain or loss based

on any appreciation or depreciation in the value of the foreign currency against the U.S. dollar, which will generally be U.S. source ordinary income or loss.

***Tax Consequences If We Are a Passive Foreign Investment Company***

Generally, a foreign corporation is treated as a passive foreign investment company ("PFIC") for United States federal income tax purposes for any tax year if, in such tax year, either (i) 75% or more of its gross income is passive in nature (the "Income Test"), or (ii) the average percentage of its assets during such tax year that produce, or are held for the production of, passive income (determined by averaging the percentage of the fair market value of its total assets which are passive assets as of the end of each quarter of such year) is 50% or more (the "Asset Test").

Because less than 75% of our gross income in 2002 and in prior years constituted passive income, as defined for purposes of the Income Test, we do not believe that application of the Income Test would have resulted in our classification as a PFIC for any of such years. In addition, we do not believe that application of the Asset Test would have resulted in our classification as a PFIC for any tax year prior to 2001.

\_\_\_\_(62)\_\_\_\_

For 2001 and 2002, however, it is possible that we could be classified as a PFIC under the Asset Test principally because a significant portion of our assets continued to consist of the cash raised in connection with both a public offering and a private offering of our ordinary shares in 2000, coupled with the decline in the public market value of our ordinary shares during 2001 and 2002 and the timing of the required valuations, although there is no definitive method prescribed in the Code, United States Treasury Regulations or administrative or judicial interpretations thereof for determining the value of a foreign corporation's assets for purposes of the Asset Test. While the legislative history of the United States Taxpayer Relief Act of 1997 indicates that "the total value of a publicly-traded foreign corporation's assets generally will be treated as equal to the sum of the aggregate value of its outstanding stock plus its liabilities", there remains substantial uncertainty regarding the valuation of a publicly-traded foreign corporation's assets for purposes of the Asset Test, and it is arguable that under alternative valuation methodologies, the value of our total assets as of the relevant valuation dates in 2001 and/or 2002 would not result in our classification as a PFIC during either or both of such years.

In view of the uncertainty regarding the valuation of our assets for purposes of the Asset Test and the complexity of the issues regarding our treatment as a PFIC for 2001, 2002 and, quite possibly, subsequent years, U.S. Shareholders are urged to consult their own tax advisors for guidance as to our status as a PFIC. For those U.S. Shareholders who determine that we were a PFIC for 2001, 2002 and/or any subsequent years and notify us in writing of their request for the information required in order to effectuate the QEF Election described below, we will promptly make such information available to them.

If we are treated as a PFIC for United States federal income tax purposes for any year during a U.S. Shareholder's holding period of ordinary shares and the U.S. Shareholder does not make a QEF Election or a "mark-to-market" election (both as described below), any gain recognized by the U.S. Shareholder upon the sale of ordinary shares (or the receipt of certain distributions) would be treated as ordinary income. This income would be allocated over the U.S. Shareholder's holding period with respect to his ordinary shares and an interest charge would be imposed on the amount of deferred tax on the income allocated to prior taxable years.

Although we generally will be treated as a PFIC as to any U.S. Shareholder if we are a PFIC for any year during the U.S. Shareholder's holding period, if we cease to satisfy the requirements for PFIC classification, then under such circumstances, the U.S. Shareholder may avoid the consequences of PFIC classification for subsequent years if he elects to recognize gain based on the unrealized appreciation in the ordinary shares through the close of the tax year in which we cease to be a PFIC. Additionally, if we are treated as a PFIC, a U.S. Shareholder who acquires ordinary shares from a decedent would be denied the normally available step-up in tax basis for these ordinary shares to fair market value at the date of death and instead would have a tax basis equal to the decedent's tax basis in these ordinary shares.

For any tax year in which we are treated as a PFIC, a U.S. Shareholder may elect to treat his ordinary shares as an interest in a qualified electing fund (a "QEF Election"), in which case, the U.S. Shareholder would be required to include in income currently his proportionate share of our earnings and profits in years in which we are a PFIC regardless of whether distributions of our earnings and profits are actually distributed to the U.S. Shareholder. Any gain subsequently recognized upon the sale by the U.S. Shareholder of his ordinary shares, however, generally would

be taxed as capital gain.

As an alternative to a QEF Election, a U.S. Shareholder may elect to mark his ordinary shares to market annually, recognizing ordinary income or loss (subject to certain limitations) equal to the difference between the fair market value of his ordinary shares and the adjusted tax basis of his ordinary shares. Losses would be allowed only to the extent of net mark-to-market gain accrued under the election.

We cannot assure you that we will avoid becoming a PFIC. U.S. holders who hold ordinary shares during a period when we are a PFIC will be subject to the foregoing rules, even if we cease to be a PFIC. U.S. Holders are urged to consult their tax advisors about the PFIC rules, including QEF elections.

***United States Federal Income Tax Consequences for Non-U.S. Holders of Ordinary Shares***

Except as described in "Information Reporting and Back-up Withholding" below, a Non-U.S. Holder of ordinary shares will not be subject to U.S. federal income or withholding tax on the payment of dividends on, and the proceeds from the disposition of, ordinary shares, unless:

\_\_\_\_(63)\_\_\_\_

- the item is effectively connected with the conduct by the Non-U.S. Holder of a trade or business in the United States and, in the case of a resident of a country which has a tax treaty with the United States, the item is attributable to a permanent establishment or, in the case of an individual, a fixed place of business, in the United States;
- the Non-U.S. Holder is an individual who holds the ordinary shares as a capital asset and is present in the United States for 183 days or more in the taxable year of the disposition and does not qualify for an exemption; or
- the Non-U.S. Holder is subject to tax under the provisions of United States tax law applicable to U.S. expatriates.

### ***Information Reporting and Back-up Withholding***

U.S. Holders generally are subject to information reporting requirements with respect to dividends paid in the United States on ordinary shares. Under existing regulations, these dividends are not subject to back-up withholding. U.S. Holders are subject to information reporting and back-up withholding at a rate of 30% on proceeds paid from the disposition of ordinary shares unless the U.S. Holder provides IRS Form W-9 or otherwise establishes an exemption.

Non-U.S. Holders generally are not subject to information reporting or back-up withholding with respect to dividends paid on, or upon the disposition of, ordinary shares, provided that the non-U.S. Holder provides a taxpayer identification number, certifies to its foreign status, or otherwise establishes an exemption.

Treasury regulations effective January 1, 2001 may alter the rules regarding information reporting and back-up withholding. In particular, those regulations would impose back-up withholding on dividends paid in the United States on ordinary shares unless the U.S. Holder provides IRS Form W-9 or otherwise establishes an exemption. Prospective investors should consult their tax advisors concerning the effect, if any, of these Treasury regulations on an investment in ordinary shares. The amount of any back-up withholding will be allowed as a credit against a U.S. or Non-U.S. Holder's United States federal income tax liability and may entitle the Holder to a refund, provided that specified required information is furnished to the IRS.

### **Documents on Display**

We are required to file reports and other information with the SEC under the Securities Exchange Act of 1934 and the regulations thereunder applicable to foreign private issuers. You may inspect and copy reports and other information filed by us with the SEC at the SEC's public reference facilities described below. Although as a foreign private issuer we are not required to file periodic information as frequently or as promptly as United States companies, we generally

announce publicly our quarterly and year-end results promptly and file periodic information with the SEC under cover of Form 6-K. As a foreign private issuer, we are also exempt from the rules under the Exchange Act prescribing the furnishing and content of proxy statements and our officers, directors and principal shareholders are exempt from the reporting and other provisions in Section 16 of the Exchange Act.

You may review a copy of our filings with the SEC, including any exhibits and schedules, at the SEC's public reference facilities in Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549 and at the regional office of the SEC located at the Northwestern Atrium Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661. You may also obtain copies of such materials from the Public Reference Section of the SEC, Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549, at prescribed rates. You may call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. As a foreign private issuer we were only required to file through the SEC's EDGAR system as of November 2002. Our periodic filings are therefore available on the SEC's Web site from that date. You may read and copy any reports, statements or other information that we file with the SEC, through the SEC's EDGAR system available on the SEC's website and at the SEC facilities listed above. These SEC filings are also available to the public from commercial document retrieval services.

Any statement in this annual report about any of our contracts or other documents is not necessarily complete. If the contract or document is filed as an exhibit to this annual report, the contract or document is deemed to modify the description contained in this annual report. We urge you to review the exhibits themselves for a complete description of the contract or document.

\_\_\_\_(64)\_\_\_\_



## **ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

### **Market Risks**

We are exposed to a variety of risks, including changes in interest rates and foreign currency exchange risk and inflation. At December 31, 2002 and December 31, 2001 we did not own any market risk sensitive instruments. However, we may in the future undertake hedging or other similar transactions or invest in market risk sensitive instruments if management determines that it is necessary to offset these risks.

### **Interest Rate Risk**

As of December 31, 2002, we had \$67.3 million in cash, cash equivalents, cash deposits and marketable securities. We invest our cash surplus in time deposits, cash deposits, and corporate bonds. Since these investments typically carry fixed interest rate and since our policy and practice is to hold these investments to maturity, financial income over the holding period is not sensitive to changes in rates interest.

### **Foreign Currency Exchange Risk and Inflation**

Since the majority of our revenues are paid in U.S. dollars, we believe that inflation and fluctuations in the NIS/U.S. dollar exchange rate have no material effect on our revenues. We incur a significant portion of our expenses, principally salaries and related personnel expenses, in New Israeli Shekels, or NIS. As a result, we are exposed to the risk that the rate of inflation in Israel will exceed the rate of devaluation of the NIS in relation to the U.S. dollar or that the timing of this devaluation lags behind inflation in Israel. In addition, we are exposed to the risk that the U.S. dollar will be devalued against the NIS. We try to protect ourselves against this possibility by investing a portion of our cash in NIS deposits. To date, we have not been materially affected by changes in the Israeli rate of inflation or the exchange rates of the NIS compared to the U.S. dollar.

## **ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES**

Not applicable.

\_\_\_\_(65)\_\_\_\_

## **PART II**

### **ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES**

None.

### **ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS**

#### **Material Modifications to the Rights of Security Holders**

None.

#### **Use of Proceeds**

None.

### **ITEM 15. CONTROLS AND PROCEDURES**

Compugen has established and maintains disclosure controls and procedures that are designed to ensure that material information relating to Compugen and its subsidiary required to be disclosed in the reports that it files or submits under the Securities Exchange Act of 1934 is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to the company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Within the 90 days prior to the filing date of this annual report, the company carried out an evaluation, under the supervision and with the participation of management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of disclosure controls and procedures. Based on that

evaluation of these disclosure controls and procedures, the Chief Executive Officer and Chief Financial Officer concluded that Compugen`s disclosure controls and procedures were effective as of the date of such evaluation.

The Chief Executive Officer and Chief Financial Officer have also concluded that there were no significant changes in the Company`s internal controls or in other factors that could significantly affect the internal controls subsequent to the date that Compugen completed its evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

**ITEM 16. RESERVED**

\_\_\_\_(66)\_\_\_\_

**PART III**

**ITEM 17. FINANCIAL STATEMENTS**

We have elected to furnish financial statements and related information specified in Item 18.

**ITEM 18. FINANCIAL STATEMENTS**

See pages F-1 to F-28.

**ITEM 19. EXHIBITS**

**Index to Exhibits**

<b>Exhibit Number</b>	<b><u>Description</u></b>
*1.1	Form of Articles of Association of Registrant
10.1	Auditors Consent dated June 9, 2003.

\* Incorporated by reference to our registration statement on Form F-1, registration number 333-12316, as amended, filed with the Securities and Exchange Commission.

**SIGNATURES**

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the registrant hereby certifies that it meets all the requirements for filing on Form 20-F and has duly caused this Annual Report to be signed on its behalf by the undersigned, thereunto duly authorized on this 4th day of June 2003.

**COMPUGEN LTD.**

Signature: \s\ Mor Amitai

Name: Mor Amitai, Ph.D.

Title: President, Chief Executive

Officer and Director

Date: June 9, 2003

\_\_\_\_(68)\_\_\_\_

**CERTIFICATION**

I, Dr. Mor Amitai, certify that:

1. I have reviewed this annual report on Form 20-F of Compugen Ltd.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The Registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
  - a. designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - b. evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
  - c. presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The Registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the Registrant's auditors and the audit committee of Registrant's board of directors (or persons performing the equivalent function):
  - a. all significant deficiencies in the design or operation of internal controls which could adversely affect the Registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
  - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The Registrant's other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Signature: \s\ Mor Amitai

Name: Mor Amitai, Ph.D.

Title: President, Chief Executive

Officer and Director

Date: June 9, 2003

\_\_\_\_(69)\_\_\_\_



**CERTIFICATION**

I, Nurit Benjamini, certify that:

1. I have reviewed this annual report on Form 20-F of Compugen Ltd.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The Registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
  - a. designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - b. evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
  - c. presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The Registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the Registrant's auditors and the audit committee of Registrant's board of directors (or persons performing the equivalent function):
  - a. all significant deficiencies in the design or operation of internal controls which could adversely affect the Registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
  - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The Registrant's other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Signature: \s\ Nurit Benjamini

Name: Nurit Benjamini

Title: Chief Financial Officer

Date: June 9, 2003

\_\_\_\_(70)\_\_\_\_

**Certification Pursuant to 18.U.S.C. Section 1350,**

**As adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the annual report of Compugen Ltd. (the "Company") on Form 20-F for the periods ending December 31, 2002 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I the undersigned, being the President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

- 1) The Report fully complies with the requirements of sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- 2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Signature: \s\ Mor Amitai

Name: Mor Amitai, Ph.D.

Title: President, Chief Executive

Officer and Director

Date: June 9, 2003

\_\_\_\_(71)\_\_\_\_

**Certification Pursuant to 18.U.S.C. Section 1350,**

**As adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the annual report of Compugen Ltd. (the "Company") on Form 20-F for the periods ending December 31, 2002 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I the undersigned, being the Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

- 1) The Report fully complies with the requirements of sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- 2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Signature: \s\ Nurit Benjamini

Name: Nurit Benjamini

Title: Chief Financial Officer

Date: June 9, 2003

\_\_\_\_(72)\_\_\_\_

**CONSENT OF INDEPENDENT AUDITORS**

We consent to the incorporation by reference in the Registration Statement on Form S-8 File No. 333-13144 of Compugen Ltd. of our report dated, February 5, 2003, with respect to the consolidated financial statements of Compugen Ltd., included in the Annual Report (Form 20-F) for the year ended December 31, 2002.

Tel-Aviv, Israel  
June 9, 2003

**KOST, FORER & GABBAY**  
A member of Ernst & Young Global

\_\_\_\_(73)\_\_\_\_

**COMPUGEN LTD. AND ITS SUBSIDIARIES**

**CONSOLIDATED FINANCIAL STATEMENTS**

-

-

**AS OF DECEMBER 31, 2002**

**U.S. DOLLARS IN THOUSANDS**

**INDEX**

	<b>Page</b>
<b>Report of Independent Auditors and Independent Public Accountants</b>	<b>F-2 - F-3</b>
<b>Consolidated Balance Sheets</b>	<b>F-4</b>
<b>Consolidated Statements of Operations</b>	<b>F-5</b>

<b>Statements of Changes in Shareholders' Equity</b>	<b>F-6</b>
<b>Consolidated Statements of Cash Flows</b>	<b>F-7</b>
<b>Notes to Consolidated Financial Statements</b>	<b>F-8 - F-28</b>

-----

\_\_\_\_(74)\_\_\_\_

## REPORT OF INDEPENDENT AUDITORS

To the Shareholders' of

Compugen Ltd.

We have audited the accompanying consolidated balance sheets of Compugen Ltd. (the "Company") and its subsidiaries as of December 31, 2002, and the related consolidated statements of operations, changes in shareholders' equity and cash flows for the year then ended December 31, 2002. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audit in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Compugen Ltd. and its subsidiaries as of December 31, 2002, and the consolidated results of their operations and cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States.



Tel-Aviv, Israel  
February 5, 2003

**KOST FORER & GABBAY**  
A Member of Ernst & Young Global

\_\_\_\_(75)\_\_\_\_

**This is a copy of the previously issued Independent Public Accountants` report of Arthur Andersen.**

**The report has not been reissued by Arthur Andersen.**

**REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS**

To the Shareholders' of

Compugen Ltd.

We have audited the accompanying consolidated balance sheets of Compugen Ltd. (an Israeli corporation) and its subsidiaries (the "Company") as of December 31, 2000 and 2001, and the related consolidated statements of operations, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2001. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audit in accordance with generally accepted auditing standards in the United States and in Israel, including those prescribed under the Auditors` Regulatios (Auditor`s Mode of Performance), 1973. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Compugen Ltd. and its subsidiaries as of December 31, 2000, 2001 and the results of their operations, changes in shareholders` equity and cash flows for each of the three years in the period ended December 31, 2001, in conformity with accounting principles generally accepted in the United States.

Tel-Aviv, Israel  
February 12, 2002

**Luboshits Kasierer**  
Arthur Andersen

\_\_\_\_(76)\_\_\_\_

		December 31,	
	Note	2002	2001
<b>ASSETS</b>			
<b>CURRENT ASSETS:</b>			
Cash and cash equivalents	4	\$ 5,289	\$ 8,438
Short-term cash deposits	5	30,195	9,241
Marketable securities	6	12,918	14,668
Trade receivables (net of allowance for doubtful accounts of \$ 0 and \$ 22 at December 31, 2002 and 2001, respectively)		1,451	1,122
Other accounts receivable and prepaid expenses	7	3,130	2,037
Inventory		111	134
<u>Total</u> current assets		53,094	35,640
<b>LONG-TERM INVESTMENTS:</b>			
Marketable securities	6	18,940	15,953
Long-term cash deposits	8	-	30,195
Long-term lease deposits		156	137
Severance pay fund		1,266	1,092
		20,362	47,377
<b>PROPERTY AND EQUIPMENT, NET</b>	9	3,801	4,272
<u>Total</u> assets		\$ 77,257	\$ 87,289
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>			
<b>CURRENT LIABILITIES:</b>			
Accounts payable and accrued expenses	10	\$ 4,949	\$ 4,887
Deferred revenue		1,595	960
<u>Total</u> current liabilities		6,544	5,847
<b>LONG-TERM LIABILITIES:</b>			
Accrued severance pay		1,832	1,380
<b>COMMITMENTS AND CONTINGENCIES</b>			
	11		
<b>SHAREHOLDERS' EQUITY:</b>			
<b>Share capital:</b>			
Ordinary shares of NIS 0.01 par value; 50,000,000 shares authorized at December 31, 2002 and 2001; 26,162,405 and 26,048,384 shares issued and outstanding at December 31, 2002 and 2001, respectively		71	71
Additional paid-in capital		149,982	150,418
Deferred stock compensation		(580)	(2,039)
Accumulated deficit		(80,592)	(68,388)

<u>Total</u> shareholders` equity	68,881	80,062
<u>Total</u> liabilities and shareholders` equity	\$ 77,257	\$ 87,289

The accompanying notes are an integral part of the consolidated financial statements.

\_\_\_\_(77)\_\_\_\_

		December 31,	<b>Year ended</b>	
	Note	2002	2001	2000
Revenues:	13			
Products		\$ 5,014	\$ 5,883	\$ 2,268
Services		4,248	4,483	4,623
Research and development grants		1,835	994	466
Total revenues		11,097	11,360	7,357
Cost of revenues:				
Products		1,411	1,853	477
Services		1,408	1,602	1,243
Research and development expenses		14,170	15,976	12,635
Sales and marketing expenses		5,538	6,565	3,781
General and administrative expenses		3,614	4,383	5,397
Total operating expenses (*)		26,141	30,379	23,533
Operating loss		(15,044)	(19,019)	(16,176)
Financial and other income, net	14	2,840	3,875	2,772
Net loss		\$ (12,204)	\$ (15,144)	\$ (13,404)
Dividends related to Convertible Preferred shares		-	-	(24,923)
Net loss available to Ordinary shares				