NANOGEN INC
Form S-3
June 20, 2005
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As filed with the United States Securities and Exchange Commission on June 20, 2005

Registration No. 333-

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM S-3

REGISTRATION STATEMENT

Under

THE SECURITIES ACT OF 1933

NANOGEN, INC.

(Exact Name of Registrant as Specified in Its charter)

Delaware	**33-0489621**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**

10398 Pacific Center Court

San Diego, CA 92121

(858) 410-4600

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant s Principal Executive Offices)

Robert W. Saltmarsh

Chief Financial Officer

Nanogen, Inc.

10398 Pacific Center Court

San Diego, CA 92121

(858) 410-4600

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copies to:

Scott D. Karchmer, Esquire

Angela C. Hilt, Esquire

Morgan, Lewis & Bockius LLP

One Market, Spear Street Tower

San Francisco, CA 94105

(415) 442-1000

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

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

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. x

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

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

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. ¨

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered(1)	**Amount to be Registered(2)(3)(4)**	**Proposed Maximum Offering Price Per Unit(5)**	**Proposed Maximum Aggregate Offering Price (4)(5)(6)(7)**	**Amount of Registration Fee**
Common Stock, $0.001 par value				
Preferred Stock, $0.001 par value				
Debt Securities				
Warrants to Purchase Common Stock				
Warrants to Purchase Preferred Stock				
Total	$ 60,000,000	100%	$ 60,000,000	$ 7,062

(1) These securities registered hereunder by the registrant may be sold separately or as units with other securities registered hereunder.
(2) An indeterminate number of or aggregate principal amount of the securities is being registered as may from time to time be issued at indeterminate prices.
(3) The securities hereunder also include such indeterminate number of securities that may be issued upon conversion of, exercise of, or exchange for the securities registered hereunder.---

(4) In no event will the aggregate maximum offering price of all of the securities issued from time to time by the registrant pursuant to this registration statement exceed $60,000,000 (or the equivalent thereof in one or more foreign currencies, foreign currency units or composite currencies). If any debt securities are issued with an original issue discount, the offering price of such debt securities shall be such greater amount as shall result in an aggregate maximum offering price not to exceed $60,000,000, less the dollar amount of any securities previously issued hereunder.
(5) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933.
(6) Exclusive of any accrued interest, distributions and dividends, if any.
(7) Includes consideration to be received by registrant for registered securities that are issuable upon exercise, conversion or exchange of other registered securities.

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

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

SUBJECT TO COMPLETION, DATED JUNE 20, 2005

PROSPECTUS

$60,000,000

NANOGEN, INC.

Common Stock

Preferred Stock

Debt Securities

Warrants to Purchase Common Stock

Warrants to Purchase Preferred Stock

An investment in the securities offered under this prospectus involves a high degree of risk. You should carefully consider the risk factors described on pages 2-15 of this prospectus.

We may offer and sell from time to time shares of common stock, shares of preferred stock, debt securities or warrants to purchase shares of common or preferred stock. We may sell any combination of the above described securities, in one or more offerings in amounts, at prices and on terms determined at the time of the offering. The total aggregate public offering price of the securities offered under this prospectus is $60,000,000.

We will provide the specific terms of the offer and sale of these securities in supplements to this prospectus. The prospectus supplements may also add, update or change information contained in this prospectus. You should read this prospectus and any supplements carefully before you invest. The prospectus may not be used to offer and sell securities unless accompanied by a prospectus supplement.

Our common stock trades on the Nasdaq National Market under the symbol NGEN . Each prospectus supplement offering any other securities will state whether those securities are listed or will be listed on any national securities exchange or the Nasdaq Stock Market.

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

The date of this prospectus is , 2005.

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FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated herein by reference include forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. All statements other than statements of historical fact are forward-looking statements for purposes of these provisions, including any projections of earnings, revenues or other financial items, any statements of the plans and objectives of management for future operations, any statements concerning proposed new products or services, any statements regarding future economic conditions or performance, and any statement of assumptions underlying any of the foregoing. In some cases, forward-looking statements can be identified by the use of terminology such as may , should , could , would , will , believes , intends , expects , plans , estimates , potential , or continue or the negative thereof or other comparable terminology. Although we believe that the expectations reflected in the forward-looking statements contained in this prospectus and in the incorporated documents are reasonable, we cannot assure you that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from those projected or assumed in the forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including but not limited to those set forth herein under the heading Risk Factors and those discussed in documents we incorporate by reference into this prospectus and for the reasons described elsewhere in this prospectus.

We will not update these forward-looking statements, whether as a result of new information, future events or otherwise. You should, however, review additional disclosures we make in our quarterly reports on Form 10-Q, current reports on Form 8-K and annual reports on Form 10-K filed with the SEC.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a shelf registration process. Under this shelf process, we may from time to time sell any combination of securities described in this prospectus in one or more offerings, up to a total dollar amount of $60,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may, along with information that is incorporated by reference as described under the heading Where You Can Find More Information, also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information described below under the heading Where You Can Find More Information.

You should rely only on the information contained in or specifically incorporated by reference into this prospectus or a supplement. No dealer, sales person or other individual has been authorized to give any information or to make any representations not contained in this prospectus. If given or made, such information or representations must not be relied upon as having been authorized by us.

This prospectus does not constitute an offer to sell or a solicitation of an offer to buy, the securities offered hereby in any jurisdiction where, or to any person to whom, it is unlawful to make such offer or solicitation.

The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of securities. Neither the delivery of this prospectus nor any sale made hereunder shall, under any circumstances, create an implication that there has not been any change in the facts set forth in this prospectus or in our affairs since the date of this prospectus.

NANOGEN, INC.

The following is only a summary. We urge you to read the entire prospectus, including the more detailed financial statements, notes to the financial statements and other information incorporated by reference from our other filings with the SEC. Investing in our securities involves risk. Accordingly, please carefully consider the information provided under the heading Risk Factors on page 2.

Nanogen was founded with a vision to improve the quality of healthcare by introducing advanced human diagnostic products that will provide higher quality of information in a shorter period of time to our customers in the research, clinical laboratory or point-of-care markets. We intend to turn this vision into reality by continuing to develop new diagnostic products or by acquiring other companies and complementary products that will expand and accelerate our entry into rapidly growing diagnostic markets. We began a targeted acquisition strategy during 2004 that is expected to result in a broad product line of advanced diagnostic products. The combination of internally developed products plus acquired products addressing large markets should provide the stimulus for significant revenue acceleration in 2005 and beyond.

We were incorporated under the laws of the State of Delaware and our stock is listed on the Nasdaq National Market under the symbol NGEN . Our corporate offices are located at 10398 Pacific Center Court, San Diego, California 92121. Our main telephone number is 858-410-4600.

For further information regarding us and our financial information, you should refer to our recent filings with the SEC. See Where You Can Find More Information and Incorporation of Certain Documents by Reference.

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RISK FACTORS

An investment in our securities involves a high degree of risk. Our business, financial condition or results of operations could be harmed by any of these risks. The risks and uncertainties described below are not the only ones we face. Additional risks not presently known to us or other factors not perceived by us to present significant risks to our business at this time also may impair our business operations.

If our products are not successfully developed or commercialized, we could be forced to curtail or cease operations.

We are at an early stage of development. As of March 31, 2005, we had only a limited product offering that includes our NanoChip® System (which consists of our NanoChip® Molecular Biology Workstation and NanoChip® Cartridge), NanoChip® Cartridge, various ASRs for detection of gene mutations associated with diseases such as cystic fibrosis, general purpose reagents and accessories to facilitate assay and protocol development and validation on the NanoChip Platform and, through our acquisition of SynX, point-of-care diagnostic tests for myocardial infarction and drugs of abuse. We announced our second-generation instrument, the NanoChip® 400, in October 2004. This new instrument is expected to begin shipping in 2005. All of our other platforms and ASRs and other potential products are under development. Our NanoChip® System, ASRs or our other products may not be successfully developed or commercialized on a timely basis, or at all. If we are unable, for technological or other reasons, to complete the development, introduction or scale-up of manufacturing of our new products, or if our products do not achieve a significant level of market acceptance, we would be forced to curtail or cease operations.

We are also party to transactions known as reagent rentals and cost-per-test agreements. Under these types of transactions, we place a Workstation at a customer site with no upfront cost to the customer. The value of the instrument is typically recaptured through a contracted stream of future reagent sales, sold at a premium to cover the cost of the system. These reagent rentals and cost-per-test agreements might have an adverse impact on our short-term instrument sales revenue and cash flow as the revenues and cash received under these agreements are over the life of the contract, as reagents are shipped to the customer. Our success will depend upon our ability to continue to overcome significant technological challenges and successfully introduce our products into the marketplace. A number of applications envisioned by us may require significant enhancements to our basic technology platform. There can be no assurance that we can successfully develop such enhancements.

Lack of market acceptance of our products and technology would harm us.

Although we have developed a number of products as discussed above, we may not be able to further develop these products or to develop other commercially viable products. Even if we develop a product, it may not be accepted in the marketplace. If we are unable to achieve market acceptance, we will not be able to generate sufficient product revenue to become profitable. We may also be forced to carry greater inventories of our products for longer periods than we may have anticipated. If we are unable to sell the inventory of our products in a timely fashion and at anticipated price levels, we may not become profitable. In addition, we may have to take accounting charges and reduce the value of our product inventory to its net realizable value. In the quarter ended March 31, 2005 we did not incur any charge to reduce our inventory to its net realizable value, however, in the years ended December 31, 2004, 2003, and 2002 we took accounting charges of approximately $3.7 million, $908,000 and $1.1 million, respectively, to reduce product inventory to its estimated net realizable value. If actual future demand or market conditions are less favorable than those currently projected by us, additional inventory write-downs may be required. Market acceptance will depend on many factors, including our ability to:

- convince prospective strategic partners and customers that our technology is an attractive alternative to other technologies;

manufacture products in sufficient quantities with acceptable quality and at an acceptable cost; and

sell, place and service sufficient quantities of our products.

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In addition, our technology platform could be harmed by limited funding available for product and technology acquisitions by our customers, internal obstacles to customer approvals of purchases of our products and market conditions in general.

Performance issues with our products may also harm market acceptance of our products and reduce our revenues. During the year ended December 31, 2004, certain clinical laboratories experienced performance issues with our cystic fibrosis analyte specific reagent, CFTR ASR, which negatively impacted our revenue. We are not currently offering our CFTR ASRs for sale in the United States. We are developing new reagents for the NC400. However, we may not be able to address product issues to the satisfaction of our clinical laboratory customers and they may decide to adopt alternative products or may not resume purchases of our CFTR ASR.

Commercialization of some of our potential products depends on collaborations with others. If our collaborators are not successful or if we are unable to find collaborators in the future, we may not be able to develop these products.

Our strategy for the research, development and commercialization of some of our products requires us to enter into contractual arrangements with corporate collaborators, joint venture partners, licensors, licensees and others. Our success depends in part upon the performance by these collaboration partners and potential collaboration partners of their responsibilities under these arrangements. Some collaborators may not perform their obligations as we expect, and we may not derive any revenue or other benefits from these arrangements. We do not know whether our collaborations will successfully develop and market any products under our respective agreements. Moreover, some of our collaborators are also researching competing technologies targeted by our collaborative programs.

Our NanoChip® System instruments, including Molecular Biology Workstation and the second-generation NanoChip® 400, are manufactured by Hitachi. As such our success in the micro-array based diagnostics market is largely dependent upon Hitachi s ability to perform under our manufacturing agreement. In October 2001, SynX entered into a development and manufacturing agreement with Princeton BioMeditech Corporation (PBM) which granted PBM exclusive rights to develop and manufacture certain point-of-care products of SynX, as well as rights to share in the profits of such products. As a result, our success in the point-of-care market is dependent upon PBM s ability to perform under the agreement.

We may be unsuccessful in entering into other collaborative arrangements to develop and commercialize our products. In addition, disputes may arise over ownership rights to intellectual property, know-how or technologies developed with our collaborators.

We recently announced our second-generation instrument system. The transition to new products subjects us to risks and uncertainties, including increased risks of excess or obsolete inventory and inventory related write-downs.

In October 2004, we announced our second-generation instrument system, the NanoChip® 400. This new instrument is expected to begin shipping in 2005. Risks inherent in the transition to our second-generation system and other new products we may release in the future include the following:

- potential delays in initial shipments of new products;

the possibility that new products may erode demand for our current products, including those under reagent rental agreements, causing a decline in sales of current products and an excessive, obsolete supply of inventory;

potential delays in customer purchases in anticipation of new product releases or a decision by customers to evaluate new products for longer periods of time before making a purchase;

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uncertainties in product pricing and market acceptance;

additional costs related to providing customer support and service for both first generation and second generation systems; and

unexpected technical or operational problems with the new products.

If any of these risks occur, our revenues could decline and our financial condition could be harmed.

If our acquisitions are unsuccessful, our business may be harmed.

As part of our business strategy, we have acquired companies, technologies and product lines to complement our internally developed products. We expect that acquisitions will remain a part of our growth strategy going forward. Acquisitions involve numerous risks, including the following:

The possibility that we will pay more than the value we derive from the acquisition;

Difficulties in integration of the operations, technologies, and products of the acquired companies;

The assumption of certain known and unknown liabilities of the acquired companies;

Difficulties in retaining key relationships with employees, customers, partners and suppliers of the acquired company.

Any of these factors could have a negative impact on our business, results of operations or financing position.

Future acquisitions could also result in potentially dilutive issuances of equity securities, the incurrence of debt, contingent liabilities and/or amortization expenses related to certain intangible assets and increased operating expenses, which could adversely affect our results of operations and financial condition. In addition, to the extent that the economic benefits associated with any of our acquisitions diminish in the future, we may be required to record additional write downs of goodwill, intangible assets or other assets associated with such acquisitions, which would adversely affect our operating results.

We may not realize the benefits that we anticipate from our recent acquisitions of Epoch Biosciences, Inc. and SynX Pharma Inc. due to integration and other challenges.

We completed two significant acquisitions in 2004: the acquisition of SynX Pharma Inc. in April 2004 and Epoch Biosciences, Inc. in December 2004. We expect that the SynX product line will accelerate our entry into the point-of-care market and we expect that the acquisition of Epoch

will result in a material increase in revenues during 2005. However, we cannot be certain that we will achieve these and other benefits which we currently expect from these acquisitions. The process of integrating these acquired companies requires significant efforts and expenditures, including the coordination of information technologies, research and development, sales and marketing, administration and manufacturing. Combining our product offerings is a complex and lengthy process involving a number of steps in which we will seek to achieve increasing degrees of integration of our products. Additionally, SynX is located in Canada and Epoch is located in Washington, and because our facilities are physically separated, it may be difficult for us to communicate effectively with, manage and integrate these employees and operations with the rest of the Company. If we are not able to integrate the operations of these acquired companies and businesses successfully, we may not be able to meet our expectations of future results of operations.

Factors that will affect the success of these acquisitions and any future acquisitions include the following:

- our ability to manage a more complex corporate structure that requires additional resources for such responsibilities as tax planning, foreign currency management, financial reporting and risk management;

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our ability to retain key employees of acquired companies; and

our ability to increase revenues due to the integration of the products and technologies of the acquired companies; and

our ability to operate efficiently following the completion of acquisitions and to achieve cost savings.

Even if we are able to successfully integrate our acquired operations, we may never realize the anticipated benefits of the SynX and Epoch acquisitions, or any other acquisition. Our failure to achieve these benefits and synergies could have a material adverse effect on our business, results of operations and financial condition.

We have a history of net losses. We expect to continue to incur net losses and we may not achieve or maintain profitability.

Since our inception, we have incurred cumulative net losses which, as of March 31, 2005, total approximately $223.4 million. Moreover, our negative cash flow and losses from operations will continue for the foreseeable future. We may never generate sufficient product revenue to become profitable. We also expect to have quarter-to-quarter fluctuations in revenues, expenses and losses, which fluctuations could be significant. The amount and timing of product revenue recognition and cash flow may depend on whether potential customers for the NanoChip® System choose to enter into sales, reagent rentals, cost-per-test or development site transactions. We believe our future operating results may be subject to quarterly fluctuations due to a variety of factors, including, but not limited to, market acceptance of the second generation NanoChip® 400 System, acquisitions, and potential other products under development, including the CHF product and diagnostics related to infectious disease, the type of acquisition program our potential customers may choose, whether and when new products are successfully developed and introduced by us or our competitors, and the achievement of milestones under our collaborative agreements with Hitachi and various government agencies. The recognition of revenue under contracts, grants and sponsored research agreements will be subject to significant fluctuations in both timing and amount and therefore our results of operations for any period may not be comparable to the results of operations for any other period.

To develop and sell our products successfully, we may need to increase our spending levels in research and development, as well as in selling, marketing and administration. We may have to incur these increased spending levels before knowing whether our products can be sold successfully.

Changes in financial accounting standards related to stock option expenses are expected to have a significant effect on our reported results.

The FASB recently issued a revised standard that requires that we record compensation expense in the statement of operations for employee stock options using the fair value method. The adoption of the new standard is expected to have a significant effect on our reported earnings, although it will not affect our cash flows, and could adversely impact our ability to provide accurate guidance on our future reported financial results due to the variability of the factors used to establish the value of stock options. As a result, the adoption of the new standard in the first quarter of fiscal 2006 could negatively affect our stock price and our stock price volatility.

We will need additional capital in the future. If additional capital is not available, we may have to curtail or cease operations.

We will need to raise more money to continue the research and development necessary to further develop our current products to bring our products to market and to further our manufacturing and marketing capabilities. We may seek additional funds through public and private stock offerings, arrangements with corporate partners, borrowings under lease lines of credit or other sources. If we can not raise more money, we will have to reduce

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our capital expenditures, scale back our development of new products, reduce our workforce and seek to license to others products or technologies that we otherwise would seek to commercialize ourselves. The amount of money we will need will depend on many factors, including among others:

- the progress of our research and development programs;
- the commercial arrangements we may establish;
- the time and costs involved in:
- scaling up our manufacturing capabilities;
- meeting regulatory requirements, including meeting necessary Quality System Regulations or QSRs and obtaining necessary domestic and international regulatory clearances or approvals;
- acquisition(s) or investment(s) into other businesses
- filing, prosecuting, defending and enforcing patent claims and litigation; and
- the scope and results of our future clinical trials, if any.

Additional capital may not be available on terms acceptable to us, or at all. Any additional equity financing would likely be dilutive to stockholders, and debt financing, if available, may include restrictive covenants and require significant collateral.

Competing technologies may adversely affect us.

We expect to encounter intense competition from a number of companies that offer products in our targeted application areas. We anticipate that our competitors in these areas will include:

- health care and other companies that manufacture laboratory-based tests and analyzers;
- diagnostic and pharmaceutical companies;
- companies developing drug discovery technologies;

companies developing molecular diagnostic tests; and

companies developing point-of-care diagnostic tests.

If we are successful in developing products in these areas, we will face competition from established companies and numerous development-stage companies that continually enter these markets. In many instances, our competitors have substantially greater financial, technical, research and other resources and larger, more established marketing, sales, distribution and service organizations than us. Moreover, these competitors may offer broader product lines and have greater name recognition than us and may offer discounts as a competitive tactic.

In addition, several development-stage companies are currently making or developing products that compete with or will compete with our potential products. Our competitors may succeed in developing, obtaining approval from the U.S. Food and Drug Administration or marketing technologies or products that are more effective or commercially attractive than our current or potential products or that render our technologies and current or potential products obsolete.

As these companies develop their technologies, they may develop proprietary positions that may prevent us from successfully commercializing products.

Also, we may not have the financial resources, technical expertise or marketing, distribution or support capabilities to compete successfully in the future.

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The uncertainty of patent and proprietary technology protection may adversely affect us.

Our success will depend in part on obtaining and maintaining meaningful patent protection on our inventions, technologies and discoveries. Our ability to compete effectively will depend on our ability to develop and maintain proprietary aspects of our technology, and to operate without infringing the proprietary rights of others, or to obtain rights to third-party proprietary rights, if necessary. Our pending patent applications may not result in the issuance of patents. Our patent applications may not have priority over others applications, and even if issued, our patents may not offer protection against competitors with similar technologies. Any patents issued to us may be challenged, invalidated or circumvented, and the rights created thereunder may not afford us a competitive advantage.

We also rely upon trade secrets, technical know-how and continuing inventions to develop and maintain our competitive position. Others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology and we may not be able to meaningfully protect our trade secrets, or be capable of protecting our rights to our trade secrets. We seek to protect our technology and patents, in part, by confidentiality agreements with our employees and contractors. Our employees may breach their existing Proprietary Information, Inventions, and Dispute Resolution Agreements and these agreements may not protect our intellectual property. This could have a material adverse effect on us.

Our products could infringe on the intellectual property rights of others, which may subject us to future litigation and cause us to be unable to license technology from third parties.

Our commercial success also depends in part on us neither infringing valid, enforceable patents or proprietary rights of third parties, nor breaching any licenses that may relate to our technologies and products. We are aware of other third-party patents that may relate to our technology. It is possible that we may unintentionally infringe these patents or other patents or proprietary rights of third parties. We may in the future receive notices claiming infringement from third parties as well as invitations to take licenses under third-party patents. Any legal action against us or our collaborative partners claiming damages and seeking to enjoin commercial activities relating to our products and processes affected by third-party rights may require us or our collaborative partners to obtain licenses in order to continue to manufacture or market the affected products and processes. In addition, these actions may subject us to potential liability for damages. We or our collaborative partners may not prevail in an action and any license required under a patent may not be made available on commercially acceptable terms, or at all.

There are many U.S. and foreign patents and patent applications held by third parties in our areas of interest, and we believe that there may be significant other litigation in the industry regarding patent and other intellectual property rights. Additional litigation could result in substantial costs and the diversion of management s efforts regardless of the result of the litigation. Additionally, the defense and prosecution of interference proceedings before the U.S. Patent and Trademark Office, or USPTO, and related administrative proceedings would result in substantial expense to us and significant diversion of effort by our technical and management personnel. We may in the future become subject to other USPTO interference proceedings to determine the priority of inventions. In addition, laws of some foreign countries do not protect intellectual property to the same extent as do laws in the U.S., which may subject us to additional difficulties in protecting our intellectual property in those countries.

We are aware of U.S. and European patents and patent applications owned by Oxford Gene Technologies. We have opposed one allowed European patent that had broad claims to array technology for analyzing a predetermined polynucleotide sequence. Oxford Gene s position with respect to the opposed patent is that the claims relate to what it terms the diagnostic mode. Those claims have now been narrowed before the Opposition Division of the European Patent Office to the point that, if these claims remain final before the European Patent Office, we believe they would not be infringed by our technology. In the oral proceedings before the Opposition Division on November 13, 14, and 15, 2001, the Division determined that the claims

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language must be limited to arrays with smooth, impermeable surfaces. The case is currently on appeal. If the decision of the Opposition Division is successfully appealed by Oxford Gene and the original claims are reinstated, or if an application relating to arrays is issued in another country with claims as broad as the original European patent, we could be subject to infringement accusations that could delay or preclude sales of some or all of our anticipated diagnostic products.

We may continue to be involved in intellectual property litigation that may be costly, time-consuming and may impact our competitive position.

In December 2002, Oxford Gene filed a complaint against us in the United States District Court for the District of Delaware claiming that we infringe U.S. Patent No. 6,054,270 entitled Analytical Polynucleotide Sequences. In April 2003, we filed an answer to the complaint that denied that we infringe this patent. In October 2003, we entered into a settlement agreement with Oxford Gene Technologies pursuant to which the lawsuit was dismissed by Oxford Gene Technology without prejudice. If the litigation were to be reinitiated, significant attorneys costs and fees could result. Although it is our position that Oxford Gene s assertions of infringement have no merit, neither the outcome of any further litigation nor the amount and range of potential fees can be assessed. No assurances can be given that we would prevail in any future lawsuits or that we could successfully defend ourselves against any future claims.

The regulatory approval process is expensive, time consuming, uncertain and may prevent us from obtaining or maintaining required approvals for the commercialization of our products.

The manufacturing, labeling, distribution and marketing of any diagnostic products we may develop will be subject to regulation in the U.S. and other countries. If we are not in compliance with these regulations, we could be subject to several problems such as:

- failure to obtain necessary regulatory approvals or clearances for our products on a timely basis, or at all;
- delays in receipt of or failure to receive approvals or clearances;
- the loss of previously received approvals or clearances;
- limitations on intended uses imposed as a condition of approvals or clearances; or
- failure to comply with existing or future regulatory requirements.

In the U.S., the Food and Drug Administration, or FDA, regulates as medical devices most test systems, kits and reagents that are marketed for human in vitro diagnostic use. Pursuant to the Federal Food, Drug, and Cosmetic Act, the FDA regulates the preclinical and clinical testing, design, safety, effectiveness, manufacture, labeling, distribution and promotion of medical devices. We will not be able to commence marketing or commercial sales in the U.S. of these products until we receive an exemption, clearance or approval from the FDA, which can be a lengthy, expensive and uncertain process. We have not applied for FDA or other regulatory approvals with respect to any of our current products or products under development. We may experience difficulties that could delay or prevent the successful development, introduction and marketing of proposed products. Regulatory clearance or approval of any proposed products may not be granted by the FDA or foreign regulatory authorities on a timely basis, if at all. Noncompliance with applicable FDA requirements can result in:

criminal prosecution, civil penalties, other administrative sanctions or judicially imposed sanctions, such as injunctions;

recall or seizure of products;

total or partial suspension of production; and

failure of the government to grant premarket clearance or premarket approval for devices or withdrawal of marketing clearances or approvals once granted.

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The FDA also has the authority to request the recall, repair, replacement or refund of the cost of any regulated device that may eventually be manufactured or distributed by us. Any devices manufactured or distributed by us pursuant to FDA clearance or approvals are subject to thorough and continuing regulation by the FDA and certain state agencies, including the California Department of Health Services.

Our dependence on suppliers for materials could impair our ability to manufacture our products.

Outside vendors provide key components and raw materials used by us, Hitachi and PBM in the manufacture of our products. Although we believe that alternative sources for these components and raw materials are available, any supply interruption in a limited or sole source component or raw material would harm our and Hitachi s or PBM s ability to manufacture our products until a new source of supply is identified and qualified, including qualification under applicable FDA regulations. In addition, an uncorrected defect or supplier s variation in a component or raw material, either unknown to us, Hitachi or PBM or incompatible with our, Hitachi or PBM s manufacturing processes, could harm our, Hitachi or PBM s ability to manufacture our products. We, Hitachi or PBM may not be able to find a sufficient alternative supplier in a reasonable time period, or on commercially reasonable terms, if at all. If we, Hitachi or PBM fail to obtain a supplier for the manufacture of components of our products, we may be forced to curtail or cease operations.

If we are unable to manufacture products on a commercial scale, our business may suffer.

Hitachi manufactures our NanoChip® System, including the second-generation NanoChip® 400, we manufacture our NanoChip® Cartridges, our ASRs and most of our other products, and PBM manufactures our point-of-care products. We, Hitachi and PBM rely on subcontractors to manufacture the limited quantities of microchips and other components we require for use by and sale to our customers, as well as for internal and collaborative purposes. Manufacturing, supply and quality control problems may arise as we, Hitachi or PBM either alone, together or with subcontractors, attempt to further scale up manufacturing procedures or to manufacture new products. We, Hitachi or PBM may not be able to scale-up in a timely manner or at a commercially reasonable cost. Problems could lead to delays or pose a threat to the ultimate commercialization of our products and cause us to fail.

We, Hitachi or PBM or any of our contract manufacturers could encounter manufacturing difficulties, including those relating to:

- the ability to scale up manufacturing capacity;
- production yields;
- quality control and assurance; or
- shortages of components or qualified personnel.

Our manufacturing facilities and those of Hitachi and PBM and any other of our contract manufacturers are or will be subject to periodic regulatory inspections by the FDA and other federal, state and international regulatory agencies and these facilities are or may become subject to Quality System Regulation, or QSR, requirements of the FDA. If we, Hitachi, PBM or our third-party manufacturers, fail to maintain facilities in accordance with QSR regulations, other international quality standards or other regulatory requirements, then the manufacture process could be

suspended or terminated which would harm us.

Lead times for obtaining materials and components for our products and the manufacturing and introduction of our products may vary significantly which could lead to excess inventory levels as well as shortages of critical components and products if our supply and demand forecasts are inaccurate.

We anticipate that our products, including our ASRs and most of our other products will be manufactured and introduced by us and third parties, if any, based on forecasted demand and that we will seek to purchase

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components and materials in anticipation of the actual receipt of purchase orders from our customers. Lead times for materials and components to be included in our products vary significantly and may depend on factors such as the business practices of each specific supplier and the terms of the particular contracts, as well as the overall market demand for such materials and components at any given time. Also, we often rely on our own and third party forecasted demand for various products and the accuracy of such forecasts may depend on a number of factors, including but not limited to, government reports and recommendations for certain genetic testing, regulatory burdens, competitive products, the nature and effectiveness of our products, the timing and extent of the introduction of our products into the marketplace and other factors. If the forecasts are inaccurate, we could experience fluctuations in excess inventory of our products, or shortages of critical components or products, either of which could cause our business to suffer.

We currently rely on one manufacturer of our Workstation and for certain future generations of the Workstation and other hardware products, one manufacturer for our point-of-care products, and only we manufacture our NanoChip® Cartridges, and our ASRs and most of our other products, which may delay the manufacture and shipment of our products to customers.

We have signed an exclusive manufacturing agreement with Hitachi to manufacture our second generation NanoChip® 400 workstations and other hardware products to be developed. We have retained exclusive rights pursuant to each agreement to manufacture the NanoChip® Cartridges. Pursuant to the manufacturing agreements and the collaboration agreement, each party is obligated to provide the other with certain notice periods if such party determines to curtail or terminate the manufacturing relationship. Nevertheless, while alternative manufacturers of our Workstation and other products currently exist, a lengthy process would be required to negotiate and begin work under a manufacturing agreement with a new manufacturer which could disrupt our manufacturing process and harm our business.

With the acquisition of SynX we acquired an exclusive manufacturing agreement with PBM for the manufacture of our future point-of-care products. The manufacturing of our point-of-care products depends on certain intellectual property licensed by PBM and it is unlikely we could manufacture or find an alternative manufacture of the expect design of these future products without this intellectual property. Without this agreement our future revenues, if any, from our point-of-care products could be severely impacted.

The number of our sales and marketing employees may not result in corresponding numbers of sales or placements of the NanoChip® System, the sale of ASRs, point-of-care diagnostic products or other Nanogen products

As of May 31, 2005, we had 25 total employees in our worldwide sales and marketing group.

Developing, training and monitoring this sales and marketing force has required and will further require capital and time expenditures by us and certain of our employees. The size of our sales and marketing force may not result in corresponding numbers of sales or placements of the NanoChip® System nor increased product revenues associated with such sales or placements or our ASRs, point-of-care diagnostic products or other products. We may be required to increase or decrease the size of the sales and marketing force as deemed necessary and such increases or decreases in staff will require additional capital and time expenditures by us and our employees.

Failure to expand our international sales as we intend would reduce our ability to become profitable.

We expect that a portion of our sales will be made outside the United States. A successful international effort will require us to develop relationships with international customers and partners. We may not be able to identify, attract or retain suitable international customers and

distribution partners. As a result, we may be unsuccessful in our international expansion efforts. Furthermore, expansion into international markets will

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require us to continue to establish and expand foreign sales and marketing efforts, hire additional sales and marketing personnel and maintain good relations with our foreign customers and distribution partners.

International operations involve a number of risks not typically present in domestic operations, including:

- currency fluctuation risks;
- changes in regulatory requirements;
- political and economic instability, including the war on terrorism; and
- difficulties in staffing and managing foreign offices.

In addition, we expect increased costs in deploying the NanoChip® System, including the second-generation NanoChip® 400, ASRs, point-of-care diagnostics, and other products in foreign countries due to;

- licenses, tariffs and other trade barriers;
- costs and difficulties in establishing and maintaining foreign distribution partnerships;
- potentially adverse tax consequences; and
- the burden of complying with a wide variety of complex foreign laws and treaties.

Our international sales and marketing efforts will also be subject to the risks associated with the imposition of legislation and regulations relating to the import or export of high technology products. We cannot predict whether tariffs or restrictions upon the importation or exportation of our products will be implemented by the United States or other countries.

We may lose money when we exchange foreign currency received from international sales into U.S. dollars. A portion of our business is expected to be conducted in currencies other than the U.S. dollar. We recognize foreign currency gains or losses arising from our operations in the period incurred. As a result, currency fluctuations between the U.S. dollar and the currencies in which we do business will cause foreign currency transaction gains and losses. We cannot predict the effects of exchange rate fluctuations upon our future operating results because of the number of currencies involved, the variability of currency exposure and the potential volatility of currency exchange rates. We currently do not engage in foreign exchange hedging transactions to manage our foreign currency exposure.

We may have significant product liability exposure.

We face an inherent business risk of exposure to product liability and other claims in the event that our technologies or products are alleged to have caused harm. These risks are inherent in the testing, manufacturing and marketing of our products. Any product liability claim brought against us could be expensive to defend and could result in a diversion of management s attention from our core business. A successful product liability claim or series of claims could have an adverse effect on our business, financial condition and results of operations.

If we lose our key personnel or are unable to attract and retain additional personnel, we may not be able to pursue collaborations or develop our own products.

We are highly dependent on the principal members of our scientific, manufacturing, marketing, administrative, management and executive personnel, the loss of whose services might significantly delay or prevent the achievement of our objectives. We face competition from other companies, academic institutions, government entities and other organizations in attracting and retaining personnel. For the quarter ended March 31, 2005 and the years ended December 31, 2004, 2003 and 2002, we experienced turnover rates of 5.6%, 27% 25% and 29%, respectively. Turnover at these rates may, and if they continue, will adversely affect us.

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The turnover rates above exclude the impact of reductions in workforce. In April 2003, we reduced our workforce by approximately 20% and incurred a severance charge of approximately $500,000 in the second quarter of 2003. Also, in October 2002, we reduced our workforce by approximately 10% and incurred severance charges of approximately $290,000 during the fourth quarter of 2002. Continued layoffs could have an adverse effect on us.

Health care reform and restrictions on reimbursement may limit our returns on potential products.

Our ability to earn sufficient returns on our products will depend in part on the extent to which reimbursement for our products and related treatments will be available from:

- government health administration authorities;
- private health coverage insurers;
- managed care organizations; and
- other organizations.

If appropriate reimbursement cannot be obtained, we could be prevented from successfully commercializing our potential products.

There are efforts by governmental and third party payors to contain or reduce the costs of health care through various means. We expect that there will continue to be a number of legislative proposals to implement government controls. The announcement of proposals or reforms could impair our ability to raise capital. The adoption of proposals or reforms could impair our business.

Additionally, third party payors are increasingly challenging the price of medical products and services. If purchasers or users of our products are not able to obtain adequate reimbursement for the cost of using our products, they may forego or reduce their use. Significant uncertainty exists as to the reimbursement status of newly approved health care products, and whether adequate third party coverage will be available.

If ethical and other concerns surrounding the use of genetic information become widespread, we may have less demand for our products.

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 certain conditions, particularly for those that have no known cure. Any of these scenarios could reduce the potential markets for our products, which could seriously harm our business, financial condition and results of operations.

We use hazardous materials in our business. Any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

Our research and development processes involve the controlled storage, use and disposal of hazardous materials including, but not limited to, biological hazardous materials and radioactive compounds. We are subject to federal, state and local regulations governing the use, manufacture, storage, handling and disposal of materials and waste products. Although we believe that our safety procedures for handling and disposing of these hazardous materials comply with the standards prescribed by law and regulation, the risk of accidental contamination or injury from hazardous materials cannot be completely eliminated. In the event of an accident, we could be held liable for any damages that result, and any liability could exceed the limits or fall outside the coverage of our insurance. We may not be able to maintain insurance on acceptable terms, or at all. We could be required to incur significant costs to comply with current or future environmental laws and regulations.

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Our stock price could continue to be highly volatile and our stockholders may not be able to resell their shares at or above the price they paid for them.

The market price of our common stock, like that of many other life sciences companies, has been highly volatile and is likely to continue to be highly volatile. The following factors, among others, could have a significant impact on the market price of our common stock:

- the results of our premarket studies and clinical trials or those of our collaborators or competitors or for diagnostic testing in general;
- evidence of the safety or efficacy of our potential products or the products of our competitors;
- the announcement by us or our competitors of technological innovations or new products;
- the announcement by us of acquisitions by customers of our NanoChip® System, ASRs or our other products;
- announcements by us of government grants or contracts or of failure to obtain such government grants or contracts;
- announcements by us of involvement in litigation;
- developments concerning our patents or other proprietary rights or those of our competitors, including other litigation or patent office proceedings;
- loss of key board, executive, management or other personnel or the increase or decrease in size of our sales and marketing staff;
- governmental regulatory actions or the failure to gain necessary clearances or approvals;
- the ability to obtain necessary licenses;
- changes or announcements in reimbursement policies;
- developments with our subsidiaries and collaborators;
- changes in or announcements relating to acquisition programs for our products, including the expiration or continuation of our development site agreements;
- period-to-period fluctuations in sales, inventories and our operating results;

market conditions for life science stocks, nanotechnology stocks and other stocks in general;

purchases by Nanogen pursuant to our stock repurchase program;

changes in estimates of our performance by securities analysts and the loss of coverage by one or more securities analysts;

the announcement by us of any stock repurchase plan, any purchases made thereunder by us and any cessation of the program by us;

changes in the United States war on terrorism and other geopolitical and military situations in which the country is involved; and

changes in the price of petroleum, heating oil and any other raw materials that we use at our facilities.

Investor confidence and share value may be adversely impacted if our independent auditors are unable to provide us with the attestation of the adequacy of our internal controls over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act of 2002.

As directed by Section 404 of the Sarbanes-Oxley Act of 2002, the SEC adopted rules requiring public companies to include a report of management on our internal controls over financial reporting in our annual

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reports on Form 10-K and quarterly Form 10-Qs that contains an assessment by management of the effectiveness of our internal controls over financial reporting. In addition, our independent auditors must attest to and report on management s assessment of the effectiveness of our internal controls over financial reporting as of the end of the fiscal year. How companies are maintaining their compliance with these requirements including internal control reforms, if any, to comply with the requirements of Section 404, and how independent auditors are applying these requirements and testing companies internal controls, remain subject to uncertainty. We expect that our internal controls will continue to evolve as our business activities change. In addition, the acquisitions we made during 2004 and any future acquisitions we make may impact our ability to maintain effective internal controls over financial reporting. As permitted by SEC rules, we were not required to include our SynX and Epoch subsidiaries in our management s assessment of internal control over financial reporting for the year ended December 31, 2004. However, for the year ending December 31, 2005, we will be required to assess the effectiveness of the internal controls of these companies which we acquired in 2004, in addition to our existing business. If, during any year, our independent auditors are not satisfied with our internal controls over financial reporting or the level at which these controls are documented, designed, operated, tested or assessed, or if the independent auditors interpret the requirements, rules or regulations differently than we do, then they may decline to attest to management s assessment or may issue a report that is qualified. This could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of our financial statements, which ultimately could negatively impact the market price of our shares.

Our anti-takeover provisions could discourage potential takeover attempts and make attempts by stockholders to change management more difficult.

The approval of two-thirds of our voting stock is required to take some stockholder actions, including the amendment of any of the anti-takeover provisions contained in our certificate of incorporation or amendment of our bylaws.

Further, pursuant to the terms of our stockholder rights plan adopted in November 1998, as amended, we have distributed a dividend of one right for each outstanding share of common stock. These rights will cause substantial dilution to the ownership of a person or group that attempts to acquire us on terms not approved in advance by our board of directors and may have the effect of deterring unsolicited takeover attempts.

Our business is subject to changing regulation of corporate governance and public disclosure that has increased both our costs and the risk of noncompliance.

Because our common stock is publicly traded, we are subject to certain rules and regulations of federal, state and financial market exchange entities charged with the protection of investors and the oversight of companies whose securities are publicly traded. These entities, including the Public Company Accounting Oversight Board, the SEC and Nasdaq, have recently issued new requirements and regulations and continue to develop additional regulations and requirements in response to recent laws enacted by Congress, most notably the Sarbanes-Oxley Act of 2002. Our efforts to comply with these new regulations have resulted in, and are likely to continue to result in, increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities.

Moreover, because these laws, regulations and standards are subject to varying interpretations, their application in practice may evolve over time as new guidance becomes available. This evolution may result in continuing uncertainty regarding compliance matters and additional costs necessitated by ongoing revisions to our disclosure and governance practices.

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We will be dependent upon our agreement with Applied Biosystems for a significant portion of our revenues for 2005 and future periods, and a reduction of sales under or early termination of this agreement would seriously harm our revenues and operating results and would likely cause our stock price to decline.

In January 1999, Epoch and Applied Biosystems entered into a License and Supply Agreement pursuant to which we licensed some of our technology to Applied Biosystems for use in its TaqMan® 5 - nuclease real-time PCR assays, (TaqMan® is a registered trademark of Roche Molecular Systems, Inc.). In July 1999, Epoch licensed its proprietary software, which speeds the design of oligonucleotide probes used in the study of genes, to Applied Biosystems. In August 2000, the agreement was amended to, among other things, provide for Epoch manufacturing product for Applied Biosystems. In July 2002 this agreement was further amended to remove the manufacturing rights from the contract effective October 2002, redefine product categories, increase the minimum royalties and royalty rates, and establish that minimum royalties are measured and paid quarterly. We will depend upon product sales and royalties from Applied Biosystems sales of its TaqMan® assays under this agreement for a significant portion of our revenues in 2005 and future periods.

The technology licenses and Applied Biosystem s obligation to pay us royalties on their sale of products that incorporate Epoch s technologies continue until the expiration of the underlying patents. Since the July 2002 amendment that increased the minimum royalty levels, quarterly royalties earned based on actual sales by Applied Biosystems have been less than the contractual minimum royalty levels. As a result, the royalty payments have been in the amount of the specified quarterly minimum level. The current agreement calls for quarterly royalty minimums through the third quarter of 2005. Thereafter, we will receive royalty payments based on actual sales which expected to result in a significant reduction of royalties received.

Either party may terminate the agreement upon 180 days written notice. In the event that this agreement is terminated, our revenues, financial condition and operating results would be adversely affected and our stock price would likely decline.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we intend to use the net proceeds from the sale of securities covered by this prospectus for general corporate purposes, which may include capital expenditures, investments in other businesses, acquisitions of technology, products or businesses, research and development and sales and marketing. Pending such uses, we will invest the net proceeds in interest-bearing securities.

RATIO OF EARNINGS TO FIXED CHARGES

The following table sets forth our ratio of earnings to fixed charges, and our coverage deficiency. We calculated the ratio of earnings to fixed charges by dividing earnings by total fixed charges. Earnings are defined as income (loss) before provision for income taxes and minority interest plus fixed charges less minority interest in pre-tax income of subsidiaries that have not incurred fixed charges. Fixed charges are defined as the sum of interest expensed plus amortized capitalized expenses related to indebtedness plus an estimate of the interest within rental expense. We do not currently have, and during the periods prescribed did not have, any preferred stock outstanding.

	For Year Ended December 31,					For Three Months Ended
(in thousands, unaudited)						

						March 31,
	2000	2001	2002	2003	2004	2005
Ratio of Earnings to Fixed Charges(1)	$	$	$	$	$	$
Coverage Deficiency(2)	$ (18,282)	$ (33,408)	$ (24,402)	$ (32,413)	$ (38,907)	$ (8,257)

(1) For all periods presented, earnings were insufficient to cover fixed charges.
(2) The coverage deficiency represents the net loss increased by the adding back of minority interest

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PLAN OF DISTRIBUTION

We may sell the securities from time to time in one or more transactions:

through one or more underwriters or dealers;

directly to purchasers;

through agents; or

through a combination of any of these methods of sale.

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

at a fixed price or prices, which may be changed from time to time;

at market prices prevailing at the time of sale;

at prices related to prevailing market prices; and

at negotiated prices.

The prospectus supplement with respect to the offered securities will set forth the terms of the offering, including the names of the underwriters, dealers or agents, if any, the purchase price of the securities, the net proceeds to us, any underwriting discounts and other items constituting underwriters compensation, any discounts or concession allow or reallowed or paid to dealers, and any securities exchange on which the securities may be listed.

Distribution Through Underwriters

If we use underwriters to sell securities, we will execute an underwriting agreement with the underwriters and will specify the name of each underwriter and the terms of the transaction (including any underwriting discounts and other terms constituting compensation of the underwriters and any dealers) in a prospectus supplement. If an underwriting syndicate is used, the managing underwriter(s) will be specified on the cover of the prospectus supplement. If underwriters are used in the sale, the offered securities will be acquired by the underwriters for their own accounts and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering or at varying prices determined at the time of sale. Any public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time. Unless otherwise set forth in the prospectus supplement, the obligations of the underwriter to purchase securities will

be subject to conditions precedent and the underwriters will be obligated to purchase all of the offered securities if any are purchased.

Direct Sales

We may sell directly to, and solicit offers from, institutional investors, individual purchasers, or the public. We will describe the terms of any such sales in a prospectus supplement.

Distribution Through Dealers and Agents

If dealers are used in an offering, we will sell securities to the dealers as principals. The dealers then may resell the securities to the public at varying prices which they determine at the time of resale. The names of the dealers and the terms of the transactions will be specified in a prospectus supplement.

The securities may be sold directly by us or through agents we designate. If agents are used in an offering, the names of the agents and the terms of the agency will be specified in a prospectus supplement. Unless otherwise indicated in a prospectus supplement, the agents will act on a best efforts basis for the period of their appointment.

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Dealers and agents named in a prospectus supplement may be deemed to be underwriters (within the meaning of the Securities Act of 1933) of the securities described therein. In addition, we may sell securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act of 1933 with respect to any sales thereof.

General Information

Each series of securities covered by this prospectus would be a new issue with no established trading market, other than our common stock which is listed on the Nasdaq National Market. Any shares of common stock sold pursuant to a prospectus supplement will be listed on the Nasdaq National Market or a stock exchange on which the common stock offered is then listed, subject (if applicable) to an official notice of issuance. Any underwriters for whom securities are sold by us for public offering and sale may make a market in the securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. The securities other than the common stock may or may not be listed on a national securities exchange or eligible for quotation or trading on the Nasdaq Stock Market. Therefore, we cannot provide any assurance to you concerning the liquidity of any of the securities covered by this prospectus.

Certain underwriters, dealers or agents and their associates may engage in transactions with, and perform services for, us in the ordinary course of business.

Underwriters, dealers and agents may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments made by the underwriters, dealers or agents, under agreements between us and the underwriters, dealers and agents. The terms of any indemnification provisions will be set forth in a prospectus supplement.

In connection with the offering of certain offered securities covered by this prospectus, certain persons participation in such offering may engage in transactions that stabilize, maintain or otherwise affect the market prices of such offered securities of our other securities, including stabilizing transactions, syndicate covering transactions and the imposition of penalty bids. Specifically, such persons may overallot in connection with the offering and may bid for and purchase the offered securities in the open market.

The maximum commission or discount to be received by any member of the National Association of Securities Dealers, Inc. or independent broker-dealer will not be greater than 8% of the initial gross proceeds of any security being sold.

Under the securities laws of some states, the securities registered by the registration statement that includes this prospectus may be sold in those states only through licensed brokers or dealers.

Without limiting the generality of the foregoing, we may also issue some or all of the securities offered pursuant to this prospectus in exchange for property, including securities or assets of other companies we may acquire in the future.

THE SECURITIES WE MAY OFFER

We may sell from time to time, in one or more offerings:

- common stock;
- preferred stock;
- debt securities;
- warrants to purchase shares of common stock; and
- warrants to purchase shares of preferred stock.

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The aggregate initial offering price of the offered securities will not exceed $60,000,000.

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize all the material terms and provisions of the various types of securities that we may offer. We will describe the particular terms of any securities offered by a prospectus supplement. If we so indicate in a prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement the securities exchange or market, if any, on which the securities will be listed or quoted.

DESCRIPTION OF CAPITAL STOCK

The following summary of terms of our common stock and preferred stock, together with any additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of these securities, but is not complete. For the complete terms of our common stock and preferred stock, please refer to our certificate of incorporation and our bylaws that are incorporated by reference into the registration statement which includes this prospectus and, with respect to preferred stock, to any certificate of designation that we may file with the SEC for a series of preferred stock we may designate, if any.

We will describe in a prospectus supplement the specific terms of any common stock or preferred stock we may offer pursuant to this prospectus. If indicated in a prospectus supplement, the terms of such common stock or preferred stock may differ from the terms described below.

We are authorized to issue 135,000,000 shares of common stock, par value of $0.001 per share, and 5,000,000 shares of preferred stock, par value of $0.001 per share, 100,000 shares of which have been designated Series A participating preferred stock. As of the close of business on June 18, 2005, there were outstanding:

- 47,821,049 shares of common stock outstanding; and
- no shares of preferred stock.

Common Stock

Each share of our common stock entitles the holder to one vote on all matters submitted to a vote of stockholders, including the election of directors. Subject to any preference rights of holders of preferred stock, the holders of common stock are entitled to receive dividends, if any, declared from time to time by the directors out of legally available funds. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after the payment of liabilities, subject to any rights of holders of preferred stock to prior distribution.

The common stock has no preemptive or conversion rights or other subscription rights. No redemption or sinking fund provisions apply to the common stock.

Our common stock is traded under the symbol NGEN on the Nasdaq National Market. The transfer agent and registrar for our common stock is Equiserve, LP.

Preferred Stock

Rights Plan

We have adopted a stockholders rights plan that enables the Nanogen board to deter coercive or unfair takeover tactics and to prevent a person or a group from gaining control of Nanogen without offering a fair price to all stockholders. In connection with the adoption of the plan, our Board of Directors designated 100,000 shares as Series A participating preferred stock. The plan provided for a dividend of one preferred stock purchase right for each share of common stock to stockholders of record on November 30, 1998. Each right entitles such

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stockholders to buy one one-thousandth of a share of series A participating preferred stock of Nanogen at an exercise price of $50.00, subject to antidilution adjustments. The rights are exercisable only if a person or group becomes the beneficial owner of 15% or more of the common stock, or commences a tender or exchange offer which would result in the offeror beneficially owning 15% or more of common stock, which is not approved by Nanogen s board of directors. Nanogen s board and the rights agent have the authority to amend the plan. Thus, Nanogen s stockholders rights plan compels any prospective acquiror of 15% or more of Nanogen s stock to negotiate with Nanogen s board before completing a proposed acquisition. On December 12, 2000, Nanogen s board of directors amended the rights plan to allow Citigroup Inc. to acquire the beneficial ownership of up to 25% of the outstanding Nanogen common stock without triggering the ability of Nanogen s stockholders to exercise the rights governed by the rights plan. The board of directors is entitled to redeem the rights at $0.01 per Right at any time prior to the public announcement of the existence of a 15% holder. The rights expire on the earlier of (i) November 17, 2008, (ii) certain permitted merger transactions, or (iii) redemption or exchange as described in the rights plan. Until a right is exercised, the holder has no rights as a stockholder.

Undesignated Shares

Under Delaware law and our certificate of incorporation, our board of directors is authorized, without shareholder approval, to issue shares of preferred stock from time to time in one or more series. Our board of directors may fix the rights, preferences, privileges and restrictions of this stock. Some of the rights, preferences and privileges that our board of directors may designate include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences and sinking fund terms. Our board of directors may determine the number of shares constituting any series or the designation of such series. Any or all of the rights, preferences and privileges selected by the board of directors may be greater than the rights of the common stock.

If we offer a specific series of preferred stock under this prospectus, we will describe the terms of the preferred stock in the applicable prospectus supplement and will file a copy of the certificate of designation establishing the terms of the preferred stock with the SEC. To the extent required, this description will include:

- the title and stated value;
- the number of shares offered, the liquidation preference per share and the offering price;
- the dividend rate(s), period(s) and/or payment date(s), or method(s) of calculation for such dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends accumulate;
- the provisions for any sinking fund, if any;
- the provisions for redemption, if any;
- any listing of the preferred stock on any securities exchange or market;

whether preferred stock will be convertible into or exchangeable for our common stock or other of our securities, and, if applicable, the conversion or exchange price (or how it will be calculated) and conversion or exchange period;

voting rights, if any;

if appropriate, a discussion of any applicable U.S. Federal income tax considerations;

the relative ranking and preference of the preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the affairs of Nanogen; and

any other specific terms, preferences, rights, limitations or restrictions.

The transfer agent and registrar for any class or series of preferred stock will be set forth in the applicable prospectus.

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Warrants

As of June 15, 2005, warrants to purchase 1,667,053 shares of common stock were outstanding. These warrants have a weighted average exercise price of $6.94 per share and expire between July 31, 2005 and February 23, 2009.

Anti-takeover Effects of Provisions of Our Certificate of Incorporation, Bylaws and Delaware Law

Provisions of our certificate of incorporation and bylaws may have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from attempting to acquire, control of us. These provisions could limit the price that investors might be willing to pay in the future for shares of our common stock. Our certificate of incorporation and bylaws eliminate the right of stockholders to call special meetings of stockholders or to act by written consent without a meeting and require advance notice for stockholder proposals and director nominations, which may preclude stockholders from bringing matters before an annual meeting of stockholders or from making nominations for directors at an annual meeting of stockholders. Our certificate of incorporation includes provisions classifying the board of directors into three classes with staggered three-year terms. In addition, our directors may only be removed from office for cause. Under our certificate of incorporation and bylaws, the board of directors determines the size of the board and may fill vacancies on the board. The authorization of undesignated preferred stock makes it possible for our board of directors, without obtaining further stockholder approval, to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of us.

In addition, we are subject to Section 203 of the Delaware General Corporation Law which, subject to certain exceptions, generally prohibits a Delaware corporation from engaging in any business combinations with any interested stockholder, unless:

prior to the business combination, our board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85 percent of our voting stock outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding:

shares owned by persons who are directors and also officers; and

shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

at or after the time the stockholder became an interested stockholder, the business combination is:

approved by our board of directors; and

authorized at an annual or special meeting of our stockholders, and not by written consent, by the affirmative vote of at least 66 2/3 percent of our outstanding voting stock that is not owned by the interested stockholder.

In general, the Delaware General Corporation Law defines an interested stockholder to be an entity or person that beneficially owns 15 percent or more of the outstanding voting stock of the corporation or any entity or person that is an affiliate or associate of such entity or person. The Delaware General Corporation Law generally defines business combination to include the following:

any merger or consolidation involving the corporation and the interested stockholder;

any sale, lease, exchange, mortgage, pledge, transfer or other disposition of 10 percent or more of the assets of the corporation or its majority-owned subsidiary that involves the interested stockholder;

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subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

subject to certain exceptions, any transaction involving the corporation that has the effect of increasing the interested stockholder s proportionate share of the stock of any class or series of the corporation; and

the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

DESCRIPTION OF DEBT SECURITIES

The following description, together with any additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus, but is not complete. As used in this prospectus, debt securities means the debentures, notes, bonds and other evidences of indebtedness that we may issue from time to time. The debt securities may be either secured or unsecured and will be either senior debt securities or subordinated debt securities. The debt securities will be issued under one or more separate indentures between us and a trustee to be specified in an accompanying prospectus supplement. Senior debt securities will be issued under a senior indenture and subordinated debt securities will be issued under a subordinated indenture. Together, the senior indenture and the subordinated indenture are called indentures in this prospectus. The indentures will be qualified under the Trust Indenture Act of 1939 and filed with the SEC. As used in this registration statement, the term debt trustee refers to the senior trustee or the subordinated trustee, as applicable.

The particular terms of the debt securities offered and the extent, if any, to which the general provisions may not apply to debt securities so offered will be described in the prospectus supplement relating to the debt securities. For a more detailed description of the terms of the debt securities, please refer to the indenture relating to the issuance of a particular debt security.

Additional Information

We will describe in the applicable prospectus supplement the following terms relating to a series of debt securities:

the title;

any limit on the amount that may be issued;

whether or not we will issue the series of debt securities in global form, and, if so, the terms and the name of the depository;

the maturity date;

the interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

whether or not the debt securities will be secured or unsecured, and the terms of any securities;

classification as senior or subordinated debt securities;

in the case of subordinated debt securities, the degree, if any, to which the subordinated debt securities of the series will be senior to or be subordinated to other indebtedness of our in right of payment, whether the other indebtedness is outstanding or not;

the terms on which any series of debt securities may be convertible into or exchangeable for our common stock or other of our securities, including (a) provisions as to whether conversion or exchange

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is mandatory, at the option of the holder or at our option and (b) provisions pursuant to which the number of shares of common stock or other securities of ours that the holders of the series of debt securities receive would be subject to adjustment;

the place where payments will be payable;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

the date, if any, after which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional redemption provisions;

the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund provisions or otherwise, to redeem, or at the holder s option to purchase, the series of debt securities;

whether the indenture will restrict our ability to pay dividends, or will require us to maintain any asset ratios or reserves;

whether we will be restricted from incurring any additional indebtedness;

any listing of a series of debt securities on a securities exchange or market;

if appropriate, a discussion of any applicable United States federal income tax considerations;

the denominations in which we will issue the series of debt securities, if other than denominations of $1,000 and any integral multiple thereof; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of preferred stock or common stock. Warrants may be issued independently or together with any other securities offered by any prospectus supplement and may be attached to or separate from such offered securities. Each series of warrants will be issued under a separate warrant agreement. This summary of some provisions of the warrants is not complete. You should refer to the warrant agreement relating to the specific warrants being offered for the complete terms of the warrants. The warrant agreements will be filed with the SEC in connection with the offering of the specific warrants.

A prospectus supplement relating to any warrants being offered will, where applicable, describe the following terms:

the title of the warrants;

the number of warrants;

the price or prices at which the warrants will be issued;

the securities (which may include shares of common stock or preferred stock) for which the warrants are exercisable;

the number of shares of common stock or preferred stock for which each warrant is exercisable;

the exercise price for the warrants, including any changes to or adjustments in the exercise price;

if applicable, the designation and terms of the series of preferred stock with which the warrants are issued;

if applicable, the date on and after which the warrants and any related common stock or preferred stock will be separately transferable;

any listing of the warrants on a securities exchange or market;

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the date on which the right to exercise the warrants shall commence and the date on which such right shall expire;

the minimum or maximum amount of the warrants which may be exercised at any one time;

information with respect to book-entry procedures; if any;

if appropriate, a discussion of applicable United States federal income tax consequences; and

any other terms of the warrants, including terms, procedures and limitations relating to the transferability, exchange and exercise of such warrants.

Prior to the exercise of any warrants to purchase preferred stock or common stock, holders of the warrants will not have any of the rights of holders of the preferred stock or common stock purchasable upon exercise, including the right to vote or to receive any payments of dividends on the preferred stock or common stock purchasable upon exercise.

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon for us by Morgan, Lewis & Bockius LLP, San Francisco, California.

EXPERTS

The consolidated financial statements of Nanogen, Inc. appearing in our annual report on Form 10-K for the year ended December 31, 2004 (including the schedule appearing therein) and our management s assessment of the effectiveness of internal control over financial reporting as of December 31, 2004 included therein (which did not include an evaluation of the internal control over financial reporting of SynX Pharma and Epoch Biosciences), have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in its reports thereon, which as to the report on internal control over financial reporting contains an explanatory paragraph describing the above referenced exclusion of SynX Pharma and Epoch Biosciences from the scope of management s assessment and such firm s audit of internal control over financial reporting, included therein, and have been incorporated herein by reference. Such financial statements and management s assessment have been incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

The financial statements of Epoch Biosciences, Inc. as of December 31, 2003 and 2002, and for each of the years in the three-year period ended December 31, 2003, incorporated in this registration statement by reference to our current report on Form 8-K filed on December 21, 2004, have been so incorporated by reference herein in reliance on the report of KPMG LLP, independent registered public accounting firm, given on the authority of said firm as experts in accounting and auditing. The report of KPMG LLP covering the December 31, 2003 financial statements refers to the adoption of SFAS No. 142, Goodwill and Other Intangible Assets, effective January 2002.

The consolidated financial statements of SynX Pharma Inc. as of December 31, 2003 and 2002, and for each of the years in the two-year period ended December 31, 2003, incorporated in this registration statement by reference to our current report on Form 8-K/A filed on July 6, 2004,

have been so incorporated by reference herein in reliance on the report and the comments for US readers of KPMG LLP, chartered accountants, given on the authority of said firm as experts in accounting and auditing.

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WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement that we filed with the SEC. The registration statement that contains this prospectus, including the exhibits to the registration statement, contains additional information about us and the securities offered by this prospectus.

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC s Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our public filings, including reports, proxy and information statements, are also available on the SEC s web site at http://www.sec.gov.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with them, which means that we can disclose important information by referring to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference into this prospectus the documents listed below, and any future filings (other than the portions thereof deemed to be furnished to the SEC pursuant to Item 9 or Item 12 of Form 8-K) we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 prior to the termination of this offering:

- our annual report on Form 10-K for the year ended December 31, 2004, filed with the SEC on March 15, 2005;
- our quarterly report on Form 10-Q for the quarter ended March 31, 2005, filed with the SEC on May 10, 2005;
- our current report on Form 8-K filed with the SEC on January 11, 2005;
- our current report on Form 8-K filed with the SEC on December 21, 2004; and
- our current report on Form 8-K/A filed with the SEC on July 6, 2004.
- the description of our common stock contained in our registration statement on Form 8-A filed under Section 12(g) of the Securities Exchange Act of 1934 with the SEC on April 7, 1998, including any amendment or reports filed for the purpose of updating such description;

To the extent that any statement in this prospectus is inconsistent with any statement that is incorporated by reference and that was made on or before the date of this prospectus, the statement in this prospectus shall supersede such incorporated statement. The incorporated statement shall not be deemed, except as modified or superceded, to constitute a part of this prospectus or the registration statement. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete and, in each instance, we refer you to the copy of each contract or document filed as an exhibit to the registration statement.

We will furnish without charge to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon written or oral request, a copy of the information that has been incorporated into this prospectus by reference (except exhibits, unless they are specifically incorporated into this prospectus by reference). You should direct any requests for copies to:

Nanogen, Inc.

Attn: General Counsel

10398 Pacific Center Court

San Diego, CA 92121

(858) 410-4600

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$60,000,000

NANOGEN, INC.

PROSPECTUS

COMMON STOCK

PREFERRED STOCK

DEBT SECURITIES

WARRANTS TO PURCHASE COMMON STOCK

WARRANTS TO PURCHASE PREFERRED STOCK

, 2005

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PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

ITEM 14. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses in connection with the issuance and distribution of the securities registered hereby and the offerings described in this registration statement, other than underwriting discounts and commissions. All amounts are estimated except the SEC registration fee.

SEC registration fee	$ 7,062
Accounting fees and expenses	$ 60,000
Legal fees and expenses	$ 150,000
Printing expenses	$ 100,000
Miscellaneous	$ 15,000
Total	$ 332,062

ITEM 15. Indemnification of Officers and Directors.

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation s board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933. Our restated certificate of incorporation and our amended and restated bylaws provide for indemnification of our directors, officers, employees and other agents to the maximum extent permitted by Delaware law. In addition, we have entered into indemnification agreements with our officers and directors and have obtained insurance covering our officers and directors against losses.

ITEM 16. Exhibits.

Exhibit No.	Exhibit Title
1.1	Form of Underwriting Agreement for Common Stock*
1.2	Form of Underwriting Agreement for Preferred Stock*
3.1	Restated Certificate of Incorporation. Filed as Exhibit 3.(i)1 to Registrant s annual report of Form 10-K for the year ended December 31, 1998 and incorporated herein by reference.
3.2	Certificate of Amendment to Restated Certificate of Incorporation. Filed as Exhibit 3.1 to Registrant s current report on Form 8-K on December 21, 2004, and incorporated herein by reference.
3.3	Certificate of Designations, as filed with the Delaware Secretary of State of November 23, 1998. Filed as Exhibit 3(ii)1 to Registrant s annual report on Form 10-K for the year ended December 31, 1998 and incorporated herein by reference.
3.4	Amended and Restated Bylaws of Registrant. Filed as Exhibit 3.(ii)1 to Registrant s quarterly report on Form 10-Q for the quarter ended September 30, 2001 and incorporated herein by reference.

4.1	Specimen Common Stock Certificate. Filed as Exhibit 4.1 to Registrant s registration statement on Form S-1 (File No. 333-42791) and incorporated herein by reference.
4.2	Rights Agreement dated as of November 17, 1998, between Registrant and BankBoston, N.A. Filed as Exhibit 4.2 to the Registrant s registration statement on Form 8-A, filed on November 24, 1998 and incorporated herein by reference.

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Exhibit No.	Exhibit Title
4.3	Amendment No. 1 to Rights Agreement, dated as of December 11, 2000 between Registrant and FleetBoston, N.A. Filed as Exhibit 10.1 to Registrant s current report on Form 8-K filed on December 12, 2000 and incorporated herein.
4.4	Form of Warrant Agreement for Common Stock, including form of Warrant*
4.5	Form of Warrant Agreement for Preferred Stock, including form of Warrant*
4.6	Form of Warrant to Purchase Common Stock (included in Exhibit 4.4)*
4.7	Form of Warrant to Purchase Preferred Stock (included in Exhibit 4.5)*
4.8	Certificate of Designation of Preferred Stock*
4.9	Form of Preferred Stock Certificate*
4.10	Form of Senior Indenture*
4.11	Form of Subordinated Indenture*
4.12	Form of Senior Debt Security (included in Exhibit 4.10)*
4.13	Form of Subordinated Debt Security (included in Exhibit 4.11)*
5.1	Opinion of Morgan, Lewis & Bockius LLP as to the legality of the securities.
12.1	Computation of Ratio of Earnings to Fixed Charges
23.1	Consent of Independent Registered Public Accounting Firm
23.2	Consent of KPMG LLP, independent registered public accounting firm
23.3	Consent of KPMG LLP, chartered accountants
23.4	Consent of Morgan, Lewis & Bockius LLP (included in their opinion filed as Exhibit 5.1)
24.1	Power of Attorney (included in the signature page contained in Part II of the Registration Statement)
25.1	Form T-1 Statement of Eligibility of Trustee for Senior Indenture under the Trust Indenture Act of 1939.*
25.2	Form T-1 Statement of Eligibility of Trustee for Subordinated Indenture under the Trust Indenture Act of 1939.*

* To be filed by amendment or as an exhibit to a current report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, or where applicable, incorporated by reference from a subsequent filing in accordance with Section 305(b)(2) of the Trust Indenture Act of 1939.

ITEM 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(a) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(b) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement; and

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(c) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that (a) and (b) do not apply if the information required to be included in a post-effective amendment by (a) and (b) is contained in periodic reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for purposes of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant s annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered in the registration statement, and the offering of the securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) The undersigned registrant hereby undertakes that:

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

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus will be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time will be deemed to be the initial bona fide offering thereof.

(d) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(e) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Trust Indenture Act.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all the requirements for filings on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the city of San Diego, State of California on June 20, 2005.

NANOGEN, INC.

By: /s/ HOWARD C. BIRNDORF
Howard C. Birndorf
Chairman of the Board and
Chief Executive Officer

KNOW ALL MEN BY THESE PRESENTS, that the persons whose signatures appear below constitute and appoint Howard C. Birndorf, David G. Ludvigson and Robert W. Saltmarsh, and each of them individually, as their true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for them and in their names, places and steads, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to sign any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933 and any and all amendments thereto, and to file the same, with all exhibits thereto, and the other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as they might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or their substitutes, may lawfully do or cause to be done by virtue thereof.

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

Signature	Title	Date
/s/ HOWARD C. BIRNDORF **Howard C. Birndorf**	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	June 20, 2005
/s/ ROBERT SALTMARSH **Robert Saltmarsh**	Chief Financial Officer (Principal Financial and Accounting Officer)	June 20, 2005
/s/ WILLIAM G. GERBER, M.D. **William G. Gerber, M.D.**	Director	June 20, 2005
/s/ FRANK H. JELLINEK, JR. **Frank H. Jellinek, Jr.**	Director	June 20, 2005
/s/ STELIOS B. PAPADOPOULOS	Director	June 20, 2005

Stelios B. Papadopoulos		
/s/ DAVID SCHREIBER	Director	June 20, 2005
David Schreiber		
/s/ ROBERT E. WHALEN	Director	June 20, 2005
Robert E. Whalen		

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