

NANOGEN INC  
Form POS AM  
December 16, 2004

As filed with the Securities and Exchange Commission on December 16, 2004.

Registration No. 333-119558

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**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

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**POST-EFFECTIVE**  
**AMENDMENT NO. 1**  
**TO**  
**FORM S-4**  
**REGISTRATION STATEMENT**

*UNDER*  
*THE SECURITIES ACT OF 1933*

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**NANOGEN, INC.**

(Exact name of Registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**3826**  
(Primary Standard Industrial  
Classification Number)

**33-0489621**  
(I.R.S. Employer  
Identification No.)

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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)

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David G. Ludvigson

President and Chief Operating 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)

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*COPIES TO:*

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**Approximate date of commencement of proposed sale to the public:** As soon as practicable after this registration statement becomes effective and the effective time of the merger of a wholly-owned subsidiary of the registrant with and into Epoch Biosciences, Inc., as described in the Agreement and Plan of Merger and Reorganization, dated as of September 7, 2004, included as Annex A to the joint proxy statement/prospectus forming a part of this registration statement.

If the securities being registered on this Form are being offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box. "

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If this Form is filed to register additional securities for an offering pursuant to Rule 462(a) under the Securities Act of 1933, as amended (the Securities Act ), check the following box and list the Securities Act Registration Statement number of the earlier effective Registration Statement for the same offering. "

If this Form is a post-effective amendment filed pursuant to Rule 462(d) 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. "

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**PART II**

**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 20. *Indemnification of Directors and Officers.***

Nanogen's certificate of incorporation provides that Nanogen shall, to the fullest extent permitted by the Delaware General Corporation Law, indemnify any person who is or is made a party or is threatened to be made a party to or is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director, officer, employee or agent of Nanogen, or is or was serving at the request of Nanogen as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against all expenses, liability and loss reasonably incurred or suffered by such person in connection with such action, suit or proceeding; provided, however, that, the corporation shall indemnify any such person seeking indemnification in connection with a proceeding initiated by such person only if such proceeding was authorized by Nanogen's board of directors. Nanogen's certificate of incorporation also provides that such indemnification rights shall not be exclusive of other indemnification rights to which those seeking indemnification may be entitled under any statute, provision of Nanogen's restated certificate of incorporation, bylaw, agreement or the vote of its stockholders or disinterested directors.

Nanogen's bylaws provide that Nanogen shall, to the fullest extent authorized by Section 145 of the Delaware General Corporation Law, indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of Nanogen), by reason of the fact that such person is or was a director, officer, employee or agent of Nanogen or is or was serving at the request of Nanogen as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of Nanogen. In the event of an action, suit or proceeding by or in the right of Nanogen, no indemnification is available for any person adjudged to be liable for negligence or misconduct in the performance of such person's duty to Nanogen unless the Delaware Court of Chancery determines such person is fairly and reasonably entitled to indemnification. Nanogen's bylaws also provide that such indemnification rights shall not be exclusive of other indemnification rights to which those seeking indemnification may be entitled under any bylaw, agreement or the vote of its stockholders or disinterested directors.

Nanogen intends to purchase and maintain insurance on behalf of any person who is a director or officer against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

**Item 21. *Exhibits and Financial Statement Schedules.***

The following exhibits are filed with this registration statement:

<u>Exhibit No</u>	<u>Exhibit Title</u>
3.1 (3)	Restated Certificate of Incorporation. (3.(i)1)
3.2 (3)	Certificate of Designations, as filed with the Delaware Secretary of State on November 23, 1998. (3.(i)2)
3.3 (11)	Amended and Restated Bylaws of Registrant. (3.(ii)1).

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- 4.1 (1) Form of Common Stock Certificate. (4.1)
- 4.2 (2) Rights Agreement dated as of November 17, 1998, between Registrant and BankBoston, N.A.

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<u>Exhibit No</u>	<u>Exhibit Title</u>
4.3 (8)	Amendment No. 1 to Rights Agreement, dated as of December 11, 2000 between Registrant and FleetBoston, N.A.
5.1 (*)	Opinion of Morgan, Lewis & Bockius LLP as to the validity of the common stock of Nanogen, Inc. being registered hereby, together with consent.
8.1 (**)	Form of Opinion of Morgan, Lewis & Bockius, LLP, counsel to Nanogen, Inc., as to certain U.S. tax matters, together with consent.
8.2 (**)	Form of Opinion of Stradling Yocca Carlson & Rauth, counsel to Epoch Biosciences, Inc., as to certain U.S. tax matters, together with consent.
10.1 (11)	1997 Stock Incentive Plan of Nanogen, Inc. ( 1997 Plan ), as amended. (10.7)
10.2 (6)	Form of Incentive Stock Option Agreement under the 1997 Plan, as amended. (10.2)
10.3 (6)	Form of Nonqualified Stock Option Agreement under the 1997 Plan, as amended. (10.3)
10.4 (10)	Nanogen, Inc. Employee Stock Purchase Plan, as amended.
10.5 (13)	Nanogen, Inc. 2002 Stock Bonus Plan.
10.6 (1)	Form of Indemnification Agreement between Registrant and its directors and executive officers. (10.7)
10.7 (7)	Warrant to Purchase Common Stock between Registrant and Aventis Research and Technologies Verwaltungs, GmbH, dated September 22, 2000. (10.9)
10.8 (12)	Warrant to Purchase Common Stock between Registrant and Genetic Technologies Limited, dated June 3, 2002. (10.9)
10.9 (16)	Form of Securities Purchase Agreement between Registrant and investors described therein, dated September 17, 2003.
10.10 (17)	Warrant to Purchase Common Stock between Registrant and Aventis Pharma Deutschland, GmbH, dated June 6, 2003. (10.10)
10.11 (5)(+)	Reader, Loader and Cassette Low Cost Engineering and Manufacturing Agreement by and between Registrant and Hitachi, Ltd. dated as of December 15, 1999.
10.11 (7)(+)	First Amendment to Reader, Loader and Cassette Low Cost Engineering and Manufacturing Agreement between Registrant and Hitachi, Ltd., dated July 26, 2000. (10.7)
10.12 (7)(+)	Collaboration Agreement between Registrant and Hitachi, Ltd., Nissei Sangyo Co. Ltd. And Hitachi Instruments Service Co. Ltd., (collectively, the Hitachi Parties ), dated July 26, 2000. (10.6)
10.14 (7)	Common Stock Purchase Agreement between Registrant and the Hitachi Parties, dated July 26, 2000. (10.8)
10.15 (1)	Amended and Restated Investors Rights Agreement between Registrant and certain security holders set forth therein, dated as of May 5, 1997, as amended. (10.18)
10.16 (1)	Master Lease Agreement between Registrant and Mellon US Leasing, dated September 11, 1997. (10.19)
10.17 (1)	Master Lease Agreement between Registrant and LMP Properties, Ltd., dated June 29, 1994 as amended on March 14, 2001. (10.20)
10.18 (1)	Lease Agreement between Registrant and Lease Management Services, Inc., dated April 26, 1994, as amended on December 13, 1994 and June 13, 1996. (10.21)
10.19 (1)	Form of Promissory Note between Registrant and certain of its executive officers, dated August 22, 1996. (10.23)

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<u>Exhibit No</u>	<u>Exhibit Title</u>
10.20 (1)	Form of Promissory Note between Registrant and certain of its executive officers, dated June 30, 1995. (10.24)
10.21 (1)	Form of Performance Stock Option Agreement. (10.26)
10.22 (11)	Amended and Restated Employment Agreement between Registrant and Howard C. Birndorf, dated as of June 3, 2001. (10.2)
10.23 (15)	Separation Agreement between Registrant and Kieran T. Gallahue, dated as of January 2, 2003
10.24 (15)	Separation Agreement between Registrant and Dr. Vance R. White, dated as of December 11, 2002.
10.25 (17)	Separation Agreement between Registrant and Ira Marks, dated August 15, 2003. (10.25)
10.26 (15)	Employment Agreement between Registrant and Bruce A. Huebner, dated December 1, 2002.
10.27 (15)	Employment Agreement between Registrant and William Franzblau, dated January 24, 2003.
10.28 (15)	Employment Agreement between Registrant and David Macdonald, dated January 24, 2003.
10.29 (15)	Employment Agreement between Registrant and Graham Lidgard, dated January 24, 2003
10.30 (17)	Separation Agreement between Registrant and Gerard A. Wills, dated as of May 21, 2003. (10.30)
10.31 (15)	Indemnification Agreement between Registrant and Bruce A. Huebner, dated effective as of December 1, 2002.
10.32 (15)	Indemnification Agreement between Registrant and Graham Lidgard, dated effective as of January 24, 2003.
10.33 (9) (+)	Cooperation and Shareholders Agreement among Aventis Research & Technologies GmbH & Co. KG ( Aventis R&T ), Registrant and Nanogen Recognomics GmbH ( Nanogen Recognomics ), dated June 29, 2001. (10.3).
10.34 (9)(A)(+)	Contribution Agreement among Aventis R&T, Registrant and Nanogen Recognomics, dated June 27, 2001. (10.4).
10.35 (11)(+)	Settlement Agreement between Motorola, Inc., Genometrix, Inc., the Massachusetts Institute of Technology and Registrant, dated July 20, 2001. (10.6)
10.36 (14)	Settlement Agreement between CombiMatrix Corporation, Dr. Donald Montgomery, Acacia Research Corporation and Registrant, dated September 30, 2002.
10.37 (4)	Master Loan and Security Agreement between Registrant and Transamerica Business Credit Corporation, dated June 14, 1999.
10.38 (18)	Offer Letter dated May 8, 2003 between David Ludvigson and the Company (10.1).
10.39 (19)	Offer letter dated April 30, 2004 between David Ludvigson and the Company (10.1).
10.40 (19) (+)	Cross License Agreement on NT-proBNP dated July 17, 2003 between SynX Pharma Inc. and Roche Diagnostics GmbH. (10.2).
10.41 (19) (+)	Development and Manufacturing Agreement dated October 9, 2001 between SynX Pharma Inc. and Princeton BioMeditec Corporation. (10.3)
23.1 (*)	Consent of Ernst & Young LLP, Nanogen, Inc. s independent registered public accounting firm.
23.2 (*)	Consent of KPMG, LLP, Epoch Biosciences, Inc. s independent registered public accounting firm.
23.3 (*)	Consent of KPMG, LLP, SynX Pharma Inc. s independent registered public accounting firm.
23.4 (*)	Consent of Morgan, Lewis & Bockius, LLP. (included in Exhibit 5.1)

<u>Exhibit No</u>	<u>Exhibit Title</u>
23.5 (**)	Consent of Morgan, Lewis & Bockius, LLP. (included in Exhibit 8.1)
23.6 (**)	Consent of Stradling Yocca Carlson & Rauth. (included in Exhibit 8.1)
24.1 (*)	Power of Attorney (included in the signature page of this registration statement)
99.1 (*)	Consent of Seven Hills Partners, LLC.
99.2 (*)	Consent of Molecular Securities, Inc.
99.3 (*)	Form of Proxy for Nanogen, Inc.
99.4 (*)	Form of Proxy for Epoch Biosciences, Inc.

(\*) Previously filed.

(\*\*) Filed herewith.

- (1) Incorporated by reference to Registrant's Registration Statement on Form S-1 (File No. 333-42791). Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (2) Incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form 8-A, filed on November 24, 1998.
- (3) Incorporated by reference to Registrant's Annual Report on Form 10-K for the year ended December 31, 1998. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (4) Incorporated by reference to Exhibit 10.38 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 1999.
- (5) Incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2000.
- (6) Incorporated by reference to the Registrant's Form S-8 filed on June 15, 2000. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (7) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2000. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (8) Incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed on December 12, 2000.
- (9) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (10) Incorporated by reference to Exhibit 10.1 to the Registrant's Form S-8 filed on June 20, 2001. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (11) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2001. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (12) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (13) Incorporated by reference to Exhibit 10.1 to the Registrant's Form S-8 filed on August 16, 2002.



- (14) Incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 31, 2002.
- (15) Incorporated by reference to Registrant's Annual Report on Form 10-K for the year ended December 31, 2002. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (16) Incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed on September 22, 2003.
- (17) Incorporated by reference to the Registrant's Form 10-K for the year ended December 31, 2003. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (18) Incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2004.
- (19) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2004. Parenthetical references following the description of each document relate to the exhibit number under which such exhibit was initially filed.
- (20) Incorporated by reference.
- (+) Confidential treatment has been granted for certain information contained in this document pursuant to an order of the Securities and Exchange Commission. Such information has been omitted and filed separately with the Securities and Exchange Commission.
- (++) Confidential treatment has been requested for certain information contained in this document. Such information has been omitted and filed separately with the Securities and Exchange Commission.

**Item 22. Undertakings.**

(a) 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 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(b) The undersigned registrant hereby undertakes as follows:

(1) that prior to any public reoffering of the securities registered hereunder through use of a prospectus which is a part of this registration statement, by any person or party who is deemed to be an underwriter within the meaning of Rule 145(c), the issuer undertakes that such reoffering prospectus will contain the information called for by the applicable registration form with respect to reofferings by persons who may be deemed underwriters, in addition to the information called for by the other items of the applicable form; and

(2) that every prospectus: (i) that is filed pursuant to paragraph (1) immediately preceding, or (ii) that purports to meet the requirements of Section 10(a)(3) of the Securities Act and is used in connection with an offering of securities subject to Rule 415, will be filed as a part of an amendment to the registration statement and will not be used until such amendment is effective, and 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.

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

(d) The undersigned registrant hereby undertakes to respond to requests for information that is incorporated by reference into the prospectus pursuant to Item 4, 10(b), 11 or 13 of this form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.

(e) The undersigned registrant undertakes to supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in the registration statement when it became effective.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe it meets all of the requirements for filing on Form S-4 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, as of December 16, 2004.

NANOGEN, INC.

By: /s/ Howard C. Birndorf

\_\_\_\_\_  
 Howard C. Birndorf  
 Chairman of the Board and  
 Chief Executive Officer

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
_____ /s/ Howard C. Birndorf	Chairman of the Board and	December 16, 2004
Howard C. Birndorf	Chief Executive Officer <i>(Principal Executive Officer)</i>	
_____ *	President and Chief Operating Officer	December 16, 2004
David G. Ludvigson	<i>(Principal Financial Officer)</i>	
_____ *	Senior Director, Finance	December 16, 2004
Nicholas J. Venuto	<i>(Principal Accounting Officer)</i>	
_____ *	Director	December 16, 2004
Val Buonaiuto		

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*	Director	December 16, 2004
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Stelios B. Papadopolous

*	Director	December 16, 2004
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David R. Schreiber

*	Director	December 16, 2004
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Robert E. Whalen

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\* By: /s/ Howard C. Birndorf

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Howard C. Birndorf

Attorney-In-Fact