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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

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FORM S-8

REGISTRATION STATEMENT  
UNDER THE SECURITIES ACT OF 1933

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ENZON PHARMACEUTICALS, INC.  
(Exact name of Registrant as specified in its charter)

DELAWARE  
(State or other jurisdiction of  
incorporation or organization)

22-2372868  
(I.R.S. Employer  
Identification No.)

685 ROUTE 202/206  
BRIDGEWATER, NEW JERSEY 08807  
(Address of principal executive offices)

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ENZON PHARMACEUTICALS, INC. 2001 INCENTIVE STOCK PLAN  
(Full title of the plan)

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JEFFREY H. BUCHALTER  
CHIEF EXECUTIVE OFFICER  
ENZON PHARMACEUTICALS, INC.  
685 ROUTE 202/206  
BRIDGEWATER, NEW JERSEY 08807  
(Name and address of agent for service)

(908) 541-8600  
(Telephone number, including area code, of agent for service)

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Copies to:

Scott Waldman, Esq.  
Director and Associate General Counsel  
Enzon Pharmaceuticals, Inc.  
685 Route 202/206  
Bridgewater, New Jersey 08807  
Telephone - (908) 541-8600

Kevin T. Collins, Esq.  
Heller Ehrman LLP  
Times Square Tower  
7 Times Square  
New York, New York 10036  
Telephone - (212) 832-8300

CALCULATION OF REGISTRATION FEE

| Title of each class of securities<br>to be registered | Amount to be<br>registered | Proposed maximum<br>offering price per share | Proposed maximum<br>aggregate offering price | Amount of<br>registration<br>fee |
|---|----------------------------|--|--|----------------------------------|
| Common Stock, \$0.01 par value per<br>share (1).....  | 4,000,000 (2)              | \$7.24 (3)                                   | \$28,960,000                                 | \$3,098.72                       |

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- (1) One preferred stock purchase right will attach to and trade with each share of common stock sold in the offering. These rights are also covered by this registration statement and the value attributable to them, if any, is reflected in the market price of the common stock.
- (2) This Registration Statement covers the additional 4,000,000 shares of common stock approved by the stockholders of Enzon Pharmaceuticals, Inc. on May 18, 2006, that are issuable pursuant to Enzon Pharmaceuticals, Inc.'s 2001 Incentive Stock Plan, plus an indeterminate number of additional shares which may be offered and issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (3) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(h) and Rule 457(c) under the Securities Act of 1933, as amended, based upon the average of the high and low prices of the registrant's Common Stock on the Nasdaq National Market on May 23, 2006.

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PART I  
INFORMATION REQUIRED IN THE SECTION 10(A) PROSPECTUS

ITEM 1. PLAN INFORMATION.\*

ITEM 2. REGISTRANT INFORMATION AND EMPLOYEE PLAN ANNUAL INFORMATION.\*

\* Information required by Part I to be contained in the Section 10(a) prospectus is omitted from this registration statement in accordance with Rule 428 under the Securities Act and the Note to Part I of Form S-8.

PART II  
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The following documents filed with the Securities and Exchange Commission (the "Commission") are hereby incorporated by reference:

(a) The registrant's Transition Report on Form 10-K for the transition period ended December 31, 2005, filed with the Commission on March 3, 2006, pursuant to Section 13(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

(b) All other reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal period covered by the Transition Report referred to in (a) above.

(c) The description of the Company's Common Stock, par value \$.01 per share, as contained in a registration statement on Form 8-A filed on October 29, 1984, as amended by Form 8-A/A filed on October 15, 1990, including any amendment or report filed for the purpose of updating such description.

(d) The description of the Company's Series B Preferred Stock Purchase Rights as contained in a registration statement on Form 8-A filed on May 22, 2002, including any amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be part hereof from the date of filing such documents.

ITEM 4. DESCRIPTION OF SECURITIES.

Not applicable.

ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL.

Not applicable.

ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law (the "DGCL") empowers a corporation to 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 the corporation) by reason of the fact that he or she is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation

1

or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action, suit or proceeding if he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Section 145 also empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection with the defense or settlement of such action or suit if he or she acted under similar standards, except that no indemnification may be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless, and only to the extent that, the Delaware Court of Chancery or the court in which such action was brought shall determine that despite the adjudication of liability such person is fairly and reasonably entitled to indemnity, for such expenses which the Delaware Court of Chancery or such other court shall deem proper.

Section 145 further provides that to the extent a director, officer, employee or agent of a corporation has been successful in the defense of any action, suit or proceeding referred to above or in the defense of any claim, issue or matter therein, he or she shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection therewith, that indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and that the corporation is empowered to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation against any liability asserted against him or her in any such capacity or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liability under Section 145.

Section 102(b)(7) of the DGCL enables a corporation in its certificate of incorporation to limit the personal liability of members of its board of directors for violation of a director's fiduciary duty of care. Article 10 of the Company's certificate of incorporation, as authorized by Section 102(b)(7), provides that a director shall not be liable to the Company for breach of a fiduciary duty, except for liability:

- for any breach of the director's duty of loyalty to the Company or the Company's stockholders;
- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- under section 174 of the DGCL providing for liability of directors for unlawful payment of dividends or unlawful stock purchases or redemptions;
- for any transaction from which a director derived an improper benefit; or
- for any act or omission occurring prior to the date when Article 10 became effective.

Section 8.1 of the Company's bylaws provides for the indemnification, to the fullest extent authorized by law, of any person made, or threatened to be made, a party to an action or proceeding, whether criminal, civil, administrative or investigative, against expenses, judgments, fines, and amounts paid in settlement incurred in connection with such action or proceeding, by reason of the fact that such person is or was a director or officer of the Company. The Company's Directors' and Officers' Liability Insurance, which is provided for under Section 8.3 of the Company's bylaws, insures directors and officers against any liability arising out of such person's status as a director or officer, and insures the Company against its obligations to indemnify its directors and officers.

Certain of the Company's officers and directors have executed indemnity agreements which supplement the protections provided by the Company's certificate of incorporation and bylaws. These agreements require the Company to pay for any damages, judgments, settlements, costs and expenses for the defense of legal actions,

2

claims, proceedings and appeals due to any actual or alleged breach of duty, neglect, error, misstatement, misleading statement, omission or other act done, suffered or wrongfully attempted by the officer or director. If the Company does not pay such costs and expenses within 90 days after it receives a written claim, such officers or directors may bring a suit against the Company to recover the unpaid amount of the claim. If such officer or director is successful, the Company will be required to pay for the expenses incurred relating to the claim.

Item 7. EXEMPTION FROM REGISTRATION CLAIMED. Not applicable.

Item 8. EXHIBITS.

Exhibit  
Number  
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- 4.1 Rights Agreement dated as of May 17, 2002 ("Rights Agreement") between the Company and Continental Stock Transfer & Trust Company, as Rights Agent (incorporated by reference to exhibit 4.2 to the Company's Form 8-A (File No. 000-12957) filed with the Commission on May 22, 2002).
- 5.1 Opinion of Heller Ehrman LLP.
- 23.1 Consent of Heller Ehrman LLP (included in Exhibit 5.1).
- 23.2 Consent of Independent Registered Public Accounting Firm.
- 24.1 Powers of Attorney (included in signature page to this registration statement).

Item 9. 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:

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

(ii) 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. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) 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 paragraphs (a) (1) (i) and (a) (1) (ii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement.

3

(2) That, for the purpose of determining any liability under the Securities Act, 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, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) 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.

(c) Insofar as the indemnification for liabilities arising under the Securities Act 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 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 a successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered hereunder, 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 of 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.

[Signature Pages Follow]

4

#### 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 of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Bridgewater, State of New Jersey, on May 25, 2006.

Enzon Pharmaceuticals, Inc.

By: /s/ Jeffrey H. Buchalter

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Jeffrey H. Buchalter  
President, Chief Executive Officer and  
Chairman of the Board (Principal Executive  
Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Jeffrey H. Buchalter and Craig A. Tooman, jointly and severally, his or her attorneys-in-fact and agents, each with the power of substitution and resubstitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any amendments to this Registration Statement on Form S-8, and to file such amendments, together with exhibits and other documents in connection therewith, with the Securities and Exchange Commission, granting to each attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully as he or she might or could do in person, and ratifying and confirming all that the attorneys-in-fact and agents, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

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

| Signature<br>-----  | Title<br>-----  | Date<br>---- |
|---|---|--------------|
| /s/ Craig A. Tooman<br>-----<br>Craig A. Tooman           | Executive Vice President, Finance and Chief<br>Financial Officer (Principal Financial<br>Officer) | May 25, 2006 |
| /s/ Jeffrey H. Buchalter<br>-----<br>Jeffrey H. Buchalter | President, Chief Executive Officer and Chairman<br>of the Board (Principal Executive Officer)     | May 25, 2006 |
| -----<br>Goran Ando                                       | Director  |              |
| /s/ Rolf A. Classon<br>-----<br>Rolf A. Classon           | Director  | May 25, 2006 |
| /s/ Robert LeBuhn<br>-----<br>Robert LeBuhn               | Director  | May 25, 2006 |
| -----<br>Victor P. Micati                                 | Director  |              |
| /s/ Phillip M. Renfro<br>-----<br>Phillip M. Renfro       | Director  | May 25, 2006 |
| -----<br>Robert C. Salisbury                              | Director  |              |

Exhibit  
Number  
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- 5.1 Opinion of Heller Ehrman LLP.
- 23.1 Consent of Heller Ehrman LLP (included in Exhibit 5.1).
- 23.2 Consent of Independent Registered Public Accounting Firm.
- 24.1 Powers of Attorney (included in signature page to this registration statement).

May 25, 2006

42667-0002

Enzon Pharmaceuticals, Inc.  
685 Route 202/206  
Bridgewater, NJ 08807

RE: REGISTRATION STATEMENT ON FORM S-8

Ladies and Gentlemen:

We have acted as counsel to Enzon Pharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing of a Registration Statement on Form S-8 (the "Registration Statement"), filed by the Company on the date hereof with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Act"), with respect to the registration of a total of 4,000,000 shares of common stock of the Company, \$0.01 par value per share (the "Shares") reserved for issuance under the Company's 2001 Incentive Stock Plan, as amended and restated (the "Plan"). All capitalized terms used in this opinion and not otherwise defined shall have the respective meanings ascribed to them in the Registration Statement.

In our capacity as counsel and in connection with the rendering of the opinions set forth below, we have examined originals or photostatic copies, certified or otherwise authenticated to our satisfaction, of the Company's Amended and Restated Certificate of Incorporation, By-laws, as amended, resolutions of the Board of Directors of the Company, the Registration Statement and exhibits thereto and the related prospectus, the Plan and such other documents, instruments and records as we deemed necessary or appropriate for purposes of rendering this opinion.

In rendering this opinion, we have assumed and relied upon, without independent investigation, other than the inquiry referred to above, (i) the authenticity, completeness, truth and due authorization, execution and delivery of all documents submitted to us as originals, (ii) the genuineness of all signatures on all documents submitted to us as originals, and (iii) the conformity to the originals of all documents submitted to us as certified or photostatic copies. As to certain factual matters, we have relied, without any investigation, upon the accuracy of certain of the representations and warranties in the certificates of certain officers of the Company and upon the accuracy of the statements contained in the Registration Statement and in certificates of public officials referred to above.

The laws covered by the opinions expressed herein are limited to (a) the federal law of the United States and (b) the Delaware General Corporations Law.

This opinion is given only with respect to laws and regulations presently in effect. We assume no obligation to advise you of any changes in law or regulation which may hereafter occur, whether

Heller Ehrman LLP Times Square Tower 7 Times Square New York, NY 10036-6524  
www.hellerehrman.com

Anchorage Beijing Hong Kong Los Angeles Madison, WI NEW YORK  
San Diego San Francisco Seattle Silicon Valley Singapore  
Washington, D.C.

the same are retroactively or prospectively applied, or to update or supplement this letter in any fashion to reflect any facts or circumstances which hereafter come to our attention.

Based upon the foregoing and our examination of such questions of law as we have deemed necessary or appropriate for the purpose of this opinion, and assuming that (i) the Registration Statement becomes and remains effective during the period when the Shares are offered, issued and sold, (ii) the Shares to be sold are issued in accordance with the terms of the applicable Plan, (iii)



the Company receives the full consideration for the Shares as stated in the applicable Plan, (iv) the per share consideration for each Share includes payment of cash or other lawful consideration at least equal to the par value of the Company's Common Stock, and (v) all applicable securities laws are complied with, it is our opinion that the Shares covered by the Registration Statement, when issued and sold by the Company, after payment therefore in the manner provided in the applicable Plan and the Registration Statement, will be legally issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion letter as an exhibit to the Registration Statement.

This is a legal opinion only and not a guaranty or warranty of the matters discussed herein. It is understood that this opinion speaks as of the date given and is limited to the laws in effect as of the date hereof and we undertake no obligation to update this opinion (including, without limitation, by reason of any events or circumstances, including changes in law, occurring) or to advise you of any change of any matters stated herein, whether legal or factual, after the date hereof. The foregoing opinion is qualified in its entirety by the fact that we do not assume any responsibility for the accuracy, completeness or fairness of any statement contained in the Registration Statement or the prospectus.

Very truly yours,

/s/ Heller Ehrman LLP

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Heller Ehrman LLP

Consent of Independent Registered Public Accounting Firm  
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The Board of Directors  
Enzon Pharmaceuticals, Inc.:

We consent to the use of our reports dated March 3, 2006, with respect to the consolidated balance sheets of Enzon Pharmaceuticals, Inc. and subsidiaries as of December 31, 2005 and June 30, 2005, and the related consolidated statements of operations, stockholders' (deficit) equity, and cash flows for the six months ended December 31, 2005 and each of the years in the three-year period ended June 30, 2005, and the related financial statement schedule, management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2005 and the effectiveness of internal control over financial reporting as of December 31, 2005, incorporated herein by reference. Our report on the consolidated financial statements refers to the adoption of Statement of Financial Accounting Standards No. 123R, "Share-Based Payment," as of July 1, 2005 and the recognition of non-cash charges of \$151.0 million and \$133.1 million for the impairment of goodwill and certain intangible assets, respectively, during the six months ended December 31, 2005.

/s/ KPMG LLP

Short Hills, New Jersey  
May 25, 2006