

PROSPECTUS SUPPLEMENT TO PROSPECTUS DATED OCTOBER 16, 2000

2,300,000 SHARES
ALEXION PHARMACEUTICALS, INC.
COMMON STOCK

[LOGO]

- - ALEXION PHARMACEUTICALS, INC. IS OFFERING 2,300,000 SHARES OF COMMON STOCK BY THIS PROSPECTUS SUPPLEMENT. - CLOSING PRICE OF OUR COMMON STOCK ON OCTOBER 27, 2000: \$94.375 PER SHARE

- - TRADING SYMBOL: NASDAQ NATIONAL MARKET--
ALXN

THIS INVESTMENT INVOLVES RISKS. SEE "RISK FACTORS" BEGINNING ON PAGE 3 OF THE ACCOMPANYING PROSPECTUS AND PAGE S-3 OF THIS PROSPECTUS SUPPLEMENT.

The underwriter will purchase the common stock from Alexion at a price of \$90.75 per share resulting in \$208,725,000 aggregate proceeds to Alexion.

The underwriter may offer the common stock through negotiated transactions at market prices prevailing at the time of sale, at prices relating to prevailing market prices or at negotiated prices. See "Underwriting"

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY OTHER REGULATORY BODY HAS APPROVED OR DISAPPROVED THESE SECURITIES, OR PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

U.S. BANCORP PIPER JAFFRAY

The date of this prospectus supplement is October 30, 2000.

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You should rely only on the information contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference. We have not authorized anyone to provide you with information different from that contained in any of these documents. The information contained in these documents is accurate only as of the date of each document, as the case may be, regardless of the time of delivery of this prospectus supplement and accompanying prospectus or of any sale of common stock. Our business, financial condition, results of operations and prospects may change after the date set forth in each document in which the information is presented.

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ABOUT THIS PROSPECTUS SUPPLEMENT

We provide information to you about this offering of shares of our common stock in two separate documents: (a) the accompanying prospectus, which provides general information, some of which may not apply to this offering; and (b) this prospectus supplement, which describes the specific details regarding this offering. Generally, when we refer to this "prospectus," we are referring to both documents combined.

If information in this prospectus supplement is inconsistent with the accompanying prospectus, you should rely on this prospectus supplement.

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference contain some "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995 and information relating to us that is based on the beliefs of our management, as well as assumptions made by, and the information currently available to, our management. When used in these documents, the words "estimate," "project," "believe," "anticipate," "intend," "expect" and similar expressions are intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are subject to risks and uncertainties that could cause actual results to differ materially from those contemplated in these forward-looking statements, including those risks discussed in this prospectus.

You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus supplement, the accompanying prospectus or the documents incorporated by reference, as the case may be. Except for special circumstances in which a duty to update arises when prior disclosure becomes materially misleading in light of subsequent events, we do not intend to update any of these forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

RECENT DEVELOPMENTS

On October 25, 2000, we entered into an agreement granting an exclusive worldwide license to commercialize our high throughput screening system to Arradial, Inc., a newly-organized company formed for this purpose. In exchange for the license, Arradial is paying us \$200,000. Arradial is also obligated to issue to us the greater of 525,000 Arradial shares or 15% of the equity ownership of Arradial. We retained the right to use our high throughput screening system for commercial development of therapeutic antibodies. We may terminate this agreement if Arradial fails to attain specified development, corporate and financing milestones.

RISK FACTORS

Before purchasing our common stock, you should carefully consider the risks described below in this section, risks described under the heading "Risk Factors" beginning on page 3 of the accompanying prospectus and the risks described in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus.

THERE IS A LARGE NUMBER OF SHARES THAT MAY BE SOLD IN THE MARKET FOLLOWING THIS OFFERING, WHICH MAY DEPRESS THE MARKET PRICE OF OUR COMMON STOCK.

Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. Upon completion of this offering, we will have outstanding an aggregate of 17,993,174 shares of common stock, assuming no exercise of outstanding options or warrants or conversion of convertible notes. All of the shares sold in this offering will be freely tradable without restriction or further registration under the Securities Act of 1933 unless these shares are purchased by affiliates. In addition, as of October 27, 2000, 2,528,518 shares are issuable upon conversion of warrants and exercise of options granted by us, which have also been registered for resale on registration statements filed with the SEC. We also may issue up to 1,275,555 shares of common stock upon conversion of 5 3/4% convertible subordinated notes due 2007, which have been registered for resale pursuant to a registration statement filed with the SEC.

OUR MANAGEMENT WILL HAVE BROAD DISCRETION WITH RESPECT TO THE USE OF THE PROCEEDS OF THIS OFFERING, AND MAY NOT APPLY THE PROCEEDS TO USES THAT WILL BENEFIT STOCKHOLDERS.

Our management will have broad discretion as to how to use the proceeds of this offering. You will be relying on the judgment of our management regarding the application of the proceeds of this offering. The results and effectiveness of the use of the proceeds are uncertain.

USE OF PROCEEDS

We expect the net proceeds from this sale of common stock to be approximately \$208.5 million after deducting estimated expenses. We intend to use the net proceeds from the sale of the common stock to fund research and clinical development activities, manufacturing development, manufacturing and commercialization of our product candidates; drug discovery; as well as for working capital and general corporate purposes, including for potential acquisitions of companies, additional technologies and compounds. Our management will have broad discretion in the allocation of the net proceeds of the offering. Pending such uses, we intend to invest the net proceeds in short-term, investment grade, interest-bearing securities.

DILUTION

Our net tangible book value as of July 31, 2000 was approximately \$57.7 million or \$3.81 per share of common stock. Net tangible book value per share is determined by dividing our net tangible book value, which consists of tangible assets less total liabilities, by the number of shares of common stock outstanding at that date. Without taking into account any other changes in the net tangible book value after July 31, 2000, other than to give effect to our receipt of the estimated net proceeds from the sale of the 2,300,000 shares of common stock from the offering at an offering price of \$90.75 per share, less estimated offering expenses, our net tangible book value as of July 31, 2000 after giving effect to the items above would have been approximately \$266.2 million or \$15.27 per share. This represents an immediate increase in the net tangible book value per share of \$11.46 per share to existing stockholders and an immediate dilution of \$75.48 per share to new investors. The following table illustrates this per share dilution:

Offering price.....		\$90.75
Net tangible book value per share.....	\$ 3.81	
Increase in net tangible book value per share after the offering.....	\$11.46	
Net tangible book value per share after the offering.....		\$15.27

Dilution per share to new investors.....		\$75.48
		=====

This table is based on the number of outstanding shares as of July 31, 2000 and does not include the following:

- 1,275,555 shares of common stock issuable upon conversion of our 5 3/4% convertible subordinated notes;
- 2,684,215 shares of common stock issuable upon exercise of outstanding stock options as of July 31, 2000 at a weighted average exercise price of \$21.09 per share;
- 18,117 shares of common stock issuable upon exercise of outstanding warrants as of July 31, 2000 at an exercise price of \$9.90;
- 355,594 shares of common stock issued in connection with the acquisition of Proliferon, Inc. on September 22, 2000; and
- 44,364 shares of common stock issuable upon exercise of stock options, granted in connection with our acquisition of Proliferon, Inc. on September 22, 2000, at a weighted average exercise price of \$44.35 per share.

As of October 27, 2000, there were 2,510,401 shares of common stock issuable upon the exercise of outstanding stock options at a weighted average exercise price of \$24.38 per share and 18,117 shares of common stock issuable upon exercise of outstanding warrants.

UNDERWRITING

We have entered into a purchase agreement with U.S. Bancorp Piper Jaffray Inc. with respect to the shares being offered by this prospectus supplement. Subject to certain conditions, we have agreed to sell to U.S. Bancorp Piper Jaffray Inc., and U.S. Bancorp Piper Jaffray Inc. has agreed to purchase from us, the 2,300,000 shares of common stock offered hereby.

U.S. Bancorp Piper Jaffray Inc. proposes to offer the shares of common stock from time to time for sale in one or more negotiated transactions or otherwise at market prices prevailing at the time of sale or at negotiated prices, subject to receipt and acceptance by it and subject to its right to reject any order in whole or in part. In connection with the sale of the shares of common stock offered hereby, U.S. Bancorp Piper Jaffray Inc. may be deemed to have received compensation in the form of underwriting discounts.

In connection with the offering, U.S. Bancorp Piper Jaffray Inc. may purchase or sell shares of common stock in the open market. These may include short sales and stabilizing transactions that stabilize, maintain, or otherwise affect the price of the common stock during and after the offering. Specifically, U.S. Bancorp Piper Jaffray Inc. may over-allot or otherwise create a short position in the common stock for their own account by selling more shares of common stock than we have sold to it. U.S. Bancorp Piper Jaffray Inc. may close out any short position by purchasing shares in the open market.

These activities by U.S. Bancorp Piper Jaffray Inc. may maintain or otherwise affect the market price of the common stock. As a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If these activities are commenced, they may be discontinued at any time. These transactions may be effected on the Nasdaq National Market.

We estimate that our share of the total expenses for the offering will be approximately \$225,000. This amount includes approximately \$55,103 for the SEC registration fee, \$65,000 in legal fees and expenses, \$35,000 in accounting fees and expenses and \$69,897 in miscellaneous, based upon estimates more fully set forth in Item 14 of our Registration Statement on Form S-3, effective October 16, 2000 of which this prospectus supplement is a part.

We have agreed to indemnify U.S. Bancorp Piper Jaffray Inc. against some liabilities, including liabilities under the Securities Act.

U.S. Bancorp Piper Jaffray Inc. has performed some investment banking and advisory services for us from time to time for which it has received customary fees and expenses. U.S. Bancorp Piper Jaffray Inc. may, from time to time, engage in transactions with, and perform services for, us and our affiliates in the ordinary course of business.

LEGAL MATTERS

Fulbright & Jaworski L.L.P., New York, New York, will pass upon the validity of the securities offered hereby and some other legal matters on behalf of Alexion. Legal matters in connection with the offering will be passed upon for the underwriter by Morgan, Lewis & Bockius, LLP.

EXPERTS

The audited consolidated financial statements incorporated by reference in this prospectus supplement and accompanying prospectus and elsewhere in the registration statement have been audited by Arthur Andersen LLP, independent public accountants, as indicated in their report with respect thereto, and are included herein in reliance upon the authority of said firm as experts in accounting and auditing in giving said report.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy any reports, statements or other information filed by us at the Commission's public reference room at Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549 and the regional offices of the Commission located at Seven World Trade Center, 13th Floor, New York, New York 10048, and 500 West Madison Street, Chicago, Illinois 60661. Copies of such material can be also obtained from the Public Reference Section of the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549, and its public reference rooms in New York, New York and Chicago, Illinois, at prescribed rates. Please call the Commission at 1-800-SEC-0330 for further information on the public reference rooms. Copies of such information may also be inspected at the reading room of the library of the National Association of Securities Dealers, Inc., 1735 K Street, N.W., Washington, D.C. 20006. Our filings with the Commission are also available to the public from commercial document retrieval services and at the Commission's web site at "<http://www.sec.gov>."

We "incorporate by reference" the information we file with the Commission (File No. 0-27756), which means that we can disclose important information to you by referring you to another document we filed with the Commission. The information incorporated by reference is an important part of this prospectus supplement and accompanying prospectus, and information that we file later with the Commission will automatically update and supersede this information. We incorporate by reference the documents listed below and any filings made with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, after the date of this prospectus but before the end of any offering made under this prospectus supplement and accompanying prospectus:

- our current reports on Form 8-K, filed on September 25, 2000, October 3, 2000 and October 27, 2000;
- our annual report on Form 10-K for the fiscal year ended July 31, 2000, filed on October 6, 2000;
- our registration statement on Form 8-A, filed on February 21, 1997, as amended on October 6, 2000; and
- our registration statement on Form 8-A, filed on February 12, 1996.

You should read the information relating to us in this prospectus supplement and accompanying prospectus together with the information in the documents incorporated by reference.

Any statement contained in a document incorporated by reference herein, unless otherwise indicated therein, speaks as of the date of the document. Statements contained in this prospectus may modify or replace statements contained in the documents incorporated by reference.

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents described above, except for exhibits to such documents, unless such exhibits are specifically incorporated by reference into such documents. Requests should be addressed to: Alexion Pharmaceuticals, Inc., 25 Science Park, New Haven, Connecticut 06511, (203) 776-1790, Attention: David W. Keiser, Executive Vice President and Chief Operating Officer.

2,300,000 SHARES

ALEXION PHARMACEUTICALS, INC.

COMMON STOCK

[LOGO]

PROSPECTUS SUPPLEMENT

U.S. BANCORP PIPER JAFFRAY

OCTOBER 30, 2000