

As filed with the Securities and Exchange Commission on July 22, 2021

Registration No. 333-204426

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

POST-EFFECTIVE AMENDMENT NO. 2
TO
FORM S-4

UNDER THE SECURITIES ACT OF 1933

ALEXION PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

85-4136092

(I.R.S. Employer
Identification No.)

120 Seaport Boulevard
Boston, Massachusetts 02210
(Address of principal executive offices)

David E. White
Treasurer
Alexion Pharmaceuticals, Inc.
1800 Concord Pike
Wilmington, DE 19850
(Name and address of agent for service)

(302) 886-6994
(Telephone number, including area code, of agent for service)

With copies to:

Sebastian L. Fain
Freshfields Bruckhaus Deringer US LLP
601 Lexington Avenue, 31st Floor
New York, New York 10022
1-212-277-4000

Approximate date of commencement of proposed sale to the public: Not applicable.

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

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) 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 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.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issuer Tender Offer)

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer)

DEREGISTRATION OF SECURITIES

This Post-Effective Amendment (the “**Post-Effective Amendment**”), filed by Alexion Pharmaceuticals, Inc., a Delaware corporation (f/k/a AstraZeneca Rare Disease Holdings Inc., f/k/a Delta Omega Sub Holdings Inc.) (the “**Registrant**”) and successor in interest to Alexion Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), relates to the registration statement on Form S-4 (as amended, the “**Registration Statement**”) filed with the Securities and Exchange Commission (the “**Commission**”) by the Company on May 22, 2015 and amended on June 9, 2015, pertaining to the registration of 27,425,229 shares of common stock, par value \$0.0001 per share, in connection with the acquisition of Synageva BioPharma Corp.

On December 12, 2020, AstraZeneca PLC (“**AstraZeneca**”), the Registrant, the Company, Delta Omega Sub Holdings Inc. 1, a direct, wholly owned subsidiary of the Registrant (“**Merger Sub I**”) and Alexion Rare Disease LLC (f/k/a Delta Omega Sub Holdings LLC 2), a direct, wholly owned subsidiary of the Registrant (“**Merger Sub II**”), entered into an Agreement and Plan of Merger (the “**Merger Agreement**”) that provided for the acquisition of the Company by AstraZeneca. On the terms and subject to the conditions set forth in the Merger Agreement, on July 21, 2021 (1) Merger Sub I merged with and into the Company (the “**First Merger**”) with the Company surviving the First Merger as a wholly owned subsidiary of the Registrant, and (2) immediately following the effective time of the First Merger, the Company merged with and into Merger Sub II (the “**Second Merger**”) with Merger Sub II surviving the Second Merger as a direct wholly owned subsidiary of the Registrant and an indirect wholly owned subsidiary of AstraZeneca. Effective on July 22, 2021, Merger Sub II merged with and into the Registrant, at which point the Registrant’s name was changed from AstraZeneca Rare Disease Holdings Inc. to Alexion Pharmaceuticals, Inc. (such merger, together with the First Merger and the Second Merger, the “**Mergers**”).

As a result of the Mergers, any offering pursuant to the Registration Statement has been terminated and the Registrant hereby terminates the effectiveness of the Registration Statement. In accordance with an undertaking made by the Company in the Registration Statement to remove from registration, by means of a post-effective amendment, any of the securities registered under each Registration Statement that remain unsold at the termination of the offerings, the Registrant hereby removes from registration the securities registered but unsold under the Registration Statement, if any.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, and Rule 478 thereunder, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing this Post-Effective Amendment to the Registration Statement and has duly caused this Post-Effective Amendment to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Wilmington, State of Delaware on the 22nd day of July, 2021.

ALEXION PHARMACEUTICALS, INC.

By: /s/ David E. White

Name: David E. White

Title: Treasurer
