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

POST-EFFECTIVE AMENDMENT NO. 1 TO FORM S-3 REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ENANTA PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 04-3205099 (I.R.S. Employer Identification Number)

500 Arsenal Street Watertown, Massachusetts 02472

(617) 607-0800

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jay R. Luly, Ph.D. President and Chief Executive Officer Enanta Pharmaceuticals, Inc. 500 Arsenal Street Watertown, Massachusetts 02472 (Name and address, including zip code, of agent for service)

(617) 607-0800 (Telephone number, including area code, of agent for service)

Copies to:

Stacie S. Aarestad Ryan M. Rourke Reed Foley Hoag LLP 155 Seaport Boulevard Boston, Massachusetts 02210 Telephone: (617) 832-1000 Nathaniel S. Gardiner Senior Vice President and General Counsel Enanta Pharmaceuticals, Inc. 500 Arsenal Street Watertown, Massachusetts 02472 Telephone: (617) 607-0800

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

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.

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. \Box

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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	\boxtimes	Accelerated filer	
Non-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.

EXPLANATORY NOTE—DEREGISTRATION OF SECURITIES

This Post-Effective Amendment No. 1 (the "Post-Effective Amendment") relates to the Registration Statement on Form S-3ASR (Commission File No. 333-258632), originally filed by Enanta Pharmaceuticals, Inc. (the "Company"), with the Securities and Exchange Commission on August 9, 2021 (the "Registration Statement"). This Post-Effective Amendment is being filed to deregister any and all unsold securities under the Registration Statement because as of the filing of the Company's Annual Report on Form 10-K, which is expected to occur on or about November 22, 2023, the Company will no longer qualify as a "well-known seasoned issuer", as such term is defined in Rule 405 under the Securities Act of 1933, as amended. Consequently, the Company will no longer be eligible to use 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 securities which remain unsold at the termination of an offering, this Post-Effective Amendment is being filed to terminate the effectiveness of the Registration Statement and to remove from registration all securities registered but not sold under the Registration Statement.

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-3 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 City of Watertown, Commonwealth of Massachusetts, on this 22nd day of November 2023.

ENANTA PHARMACEUTICALS, INC.

/s/ Jay R. Luly, Ph.D. Jay R. Luly, Ph.D. President and Chief Executive Officer

No other person is required to sign this Post-Effective Amendment No. 1 to the Registration Statement in reliance upon Rule 478 of the Securities Act of 1933, as amended.