

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

**POST-EFFECTIVE AMENDMENT NO. 1
TO
FORM S-3
REGISTRATION STATEMENT NO. 333-226595
UNDER
THE SECURITIES ACT OF 1933**

Sienna Biopharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-38155
(Commission
File Number)

27-3364627
(IRS Employer
Identification Number)

**30699 Russell Ranch Road, Suite 140
Westlake Village, CA 91362
(818) 629-2256**

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

**Frederick C. Beddingfield III, M.D., Ph.D.
President and Chief Executive Officer
Sienna Biopharmaceuticals, Inc.
30699 Russell Ranch Road, Suite 140
Westlake Village, CA 91362
(818) 629-2256**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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Sienna Biopharmaceuticals, Inc.
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Approximate date of commencement of proposed sale to the public: Not applicable

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.

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 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

Accelerated filer

Smaller reporting company

Non-accelerated filer

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.

DEREGISTRATION OF UNSOLD SECURITIES

This Post-Effective Amendment (the “Post-Effective Amendment”), filed by Sienna Biopharmaceuticals, Inc., a Delaware corporation (the “Registrant”), relates to the following registration statement filed by the Registrant on Form S-3 (a “Registration Statement”) with the U.S. Securities and Exchange Commission (the “Commission”):

- Registration Statement on Form S-3 (No. 333-226595), originally filed with the Commission on August 3, 2018, pertaining to the registration of \$250,000,000 of the Registrant’s (i) common stock, (ii) preferred stock, (iii) debt securities, (iv) warrants and (v) units.

The Registrant has informed the Nasdaq Hearings Panel (the “Panel”) regarding the results of the auction process of the Registrant’s assets, pursuant to the Panel’s decision letter dated November 12, 2019. The Registrant has requested to withdraw from the hearing process and that its common stock be suspended effective December 13, 2019 (the “Delisting”).

In connection with the Delisting, any and all offerings pursuant to the Registration Statements have been terminated. In accordance with undertakings made by the Registrant in the Registration Statements to remove from registration, by means of post-effective amendment, any of the shares that had been registered for issuance that remain unsold at the termination of the offering, the Registrant hereby removes from registration all shares of the Registrant registered but unsold under the Registration Statements as of the date hereof.

SIGNATURE

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 be signed on its behalf by the undersigned, thereunto duly authorized, in Westlake Village, in the State of California, on December 11, 2019.

Sienna Biopharmaceuticals, Inc.

By: /s/ Timothy K. Andrews

Name: Timothy K. Andrews

Title: General Counsel and Secretary