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

FORM 8-A

**FOR REGISTRATION OF CERTAIN CLASSES OF SECURITIES
PURSUANT TO SECTION 12(b) OR (g) OF
THE SECURITIES EXCHANGE ACT OF 1934**

DECIPHERA PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

30-1003521
(I.R.S. Employer Identification No.)

500 Totten Pond Road
Waltham, MA
(Address of principal executive offices)

02451
(Zip Code)

Securities to be registered pursuant to Section 12(b) of the Act:

Title of each class
to be so registered
Common Stock, par value \$0.01 per share

Name of each exchange on which
each class is to be registered
The NASDAQ Stock Market LLC

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A. (c) or (e), check the following box.

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A. (d) or (e), check the following box.

If this form relates to the registration of a class of securities concurrently with a Regulation A offering, check the following box.

Securities Act registration statement file number to which this form relates: **333-220299**

Securities to be registered pursuant to Section 12(g) of the Act: **None**

INFORMATION REQUIRED IN REGISTRATION STATEMENT

Item 1. Description of Registrant's Securities to be Registered.

The description of the common stock of Deciphera Pharmaceuticals, Inc. (the "Registrant"), par value \$0.01 per share, to be registered hereunder set forth under the caption "Description of Capital Stock" in the Registrant's Registration Statement on Form S-1 (File No. 333-220299) as originally filed with the Securities and Exchange Commission on September 1, 2017, including any subsequent amendments thereto (the "Form S-1"), and in the prospectus to be filed by the Registrant pursuant to Rule 424(b) of the Securities Act of 1933, which prospectus will constitute a part of the Form S-1, is hereby incorporated by reference in response to this item.

Item 2. Exhibits.

In accordance with the "Instructions as to Exhibits" with respect to Form 8-A, no exhibits are required to be filed as part of this registration statement because no other securities of the Registrant are registered on The NASDAQ Stock Market LLC and the securities registered hereby are not being registered pursuant to Section 12(g) of the Securities Exchange Act of 1934, as amended.

SIGNATURE

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the Registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: September 27, 2017

DECIPHERA PHARMACEUTICALS, INC.

By: /s/ Michael D. Taylor

Michael D. Taylor, Ph.D.

President and Chief Executive Officer