UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-8 REGISTRATION STATEMENT

Under The Securities Act of 1933

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 Number)

200 Smith Street Waltham, MA 02451 (781) 209-6400 (Address of Principal Executive Offices)

Deciphera Pharmaceuticals, Inc. 2017 Stock Option and Incentive Plan Deciphera Pharmaceuticals, Inc. 2017 Employee Stock Purchase Plan Deciphera Pharmaceutics, Inc. 2022 Inducement Plan (Full Title of the Plans)

> Steven L. Hoerter President & Chief Executive Officer Deciphera Pharmaceuticals, Inc. 200 Smith Street Waltham, MA 02451 (781) 209-6400

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

Copies to:

Richard A. Hoffman, Esq. Sarah Ashfaq, Esq. Goodwin Procter LLP 100 Northern Avenue Boston, MA 02210 (617) 570-1000

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	\mathbf{X}		
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.

EXPLANATORY NOTE

This Registration Statement on Form S-8 registers (i) additional shares of the Registrant's common stock, \$0.01 par value per share ("Common Stock") under the Registrant's 2017 Stock Option and Incentive Plan (the "Plan"), (ii) additional shares of Common Stock under the Registrant's 2017 Employee Stock Purchase Plan (the "ESPP") and (iii) shares of Common Stock under the Registrant's 2022 Inducement Plan (the "Inducement Plan").

The number of shares of Common Stock reserved and available for issuance under the Plan is subject to an automatic annual increase on each January 1, beginning in 2018, by an amount equal to four percent (4%) of the number of shares of Common Stock issued and outstanding on the immediately preceding December 31 or such lesser number of shares of Common Stock as approved by the Administrator (as defined in the Plan). Accordingly, on January 1, 2022, the number of shares of Common Stock reserved and available for issuance under the Plan increased by 2,341,985 shares. The number of shares of Common Stock reserved and available for issuance under the Plan increased by 2,341,985 shares. The number of shares of Common Stock reserved and available for issuance under the ESPP is subject to an automatic annual increase on each January 1, beginning in 2018, by the lesser of (i) 400,000 shares, (ii) one percent (1%) of the number of shares of Common Stock issued and outstanding on the immediately preceding December 31st or (iii) such lesser number of shares of Common Stock as determined by the Administrator (as defined in the ESPP). Accordingly, on January 1, 2022, the number of shares of Common Stock reserved and available for issuance under the ESPP increased by 400,000 shares. This Registration Statement registers these additional 2,741,985 shares of Common Stock. The additional shares are of the same class as other securities relating to the Plans for which the Registrant's Registration Statement filed on Form S-8 (Registration No. 333-220866) on October 6, 2017 is effective. The information contained in the Registrant's Registration Statement on Form S-8 (Registration No. 333-220866) is hereby incorporated by reference pursuant to General Instruction E.

On January 14, 2022, the Registrant's board of directors adopted the Inducement Plan pursuant to which the Registrant reserved 800,000 shares of Common Stock to be used exclusively for grants of equity-based awards to individuals who were not previously employees or directors of the Registrant, as an inducement material to the individual's entry into employment with the Registrant within the meaning of Rule 5635(c)(4) of the Marketplace Rules of the Nasdaq Stock Market, Inc. The Inducement Plan provides for the grant of equity-based awards in the form of nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, unrestricted stock awards, and dividend equivalent rights. The Inducement Plan was adopted by the Registrant's board of directors without stockholder approval pursuant to Rule 5635(c)(4) of the Marketplace Rules of the Nasdaq Stock Market, Inc.

Part I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. Plan Information.

The documents containing the information specified in this Item 1 will be sent or given to participants as specified by Rule 428(b)(1) under the Securities Act. In accordance with the rules and regulations of the Securities and Exchange Commission (the "Commission") and the instructions to Form S-8, such documents are not being filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act.

Item 2. Registrant Information and Employee Plan Annual Information.

The documents containing the information specified in this Item 2 will be sent or given to participants as specified by Rule 428(b)(1) under the Securities Act. In accordance with the rules and regulations of the Commission and the instructions to Form S-8, such documents are not being filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act.

Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents have been previously filed by the Registrant with the Commission and are hereby incorporated by reference into this Registration Statement and shall be deemed a part hereof:

(a) The Registrant's Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Commission on February 8, 2022 (including the sections of the Registrant's Definitive Proxy Statement on Schedule 14A, filed with the Commission on April 29, 2021 and relating to its June 23, 2021 annual meeting of stockholders, that are incorporated by reference therein (other than information furnished rather than filed)); and

(b) The description of the Registrant's capital stock contained in its Registration Statement on <u>Form 8-A</u> (File No. 001-38219) filed with the Commission on September 27, 2017, and as set forth by the description of the Registrant's capital stock set forth in <u>Exhibit 4.4</u> to the Registrant's Annual Report on <u>Form 10-K</u> for the year ended December 31, 2020, filed with the Commission on February 9, 2021, and any other amendments or reports filed for the purpose of updating such description.

All reports and other documents subsequently filed with the Commission by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), prior to the filing of a post-effective amendment which indicates that all securities offered herein have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents, excluding any information furnished under Item 7.01 or Item 2.02 of any Current Report on Form 8-K (and corresponding information furnished under Item 9.01 or included as an exhibit thereto). Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or replaces such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law ("DGCL") authorizes a corporation's board of directors to grant, and authorizes a court to award, indemnity to officers, directors, and other corporate agents.

The Registrant's current amended and restated certificate of incorporation contains provisions that, in accordance with Section 102(b)(7) of the DGCL, limit the liability of its directors for monetary damages to the fullest extent permitted by Delaware law, except liability for: (i) any breach of their duty of loyalty to the Registrant or its stockholders, (ii) any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law, (iii) unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or (iv) any transaction from which they derived an improper personal benefit.

The Registrant's current amended and restated by-laws provide that the Registrant will indemnify, to the fullest extent permitted by law, any person who is or was a party or is threatened to be made a party to any action, suit or proceeding by reason of the fact that he is or was one of the Registrant's directors or officers or is or was serving at its request as a director or officer of another corporation, partnership, joint venture, trust, or other enterprise. Additionally, the amended and restated by-laws provide that the Registrant may indemnify to the fullest extent permitted by law any person who is or was a party or is threatened to be made a party to any action, suit, or proceeding by reason of the fact that he is or was one of the Registrant's employees or agents or is or was serving at its request as an employee or agent of another corporation, partnership, joint venture, trust, or other enterprise. The amended and restated by-laws also provide that the Registrant must advance expenses incurred by or on behalf of a director or officer in advance of the final disposition of any action or proceeding, subject to very limited exceptions.

The Registrant has entered into indemnification agreements with each of its directors and executive officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements require the Registrant, among other things, to indemnify its directors and executive officers against liabilities that may arise by reason of their status or service. These indemnification agreements also require the Registrant to advance all expenses incurred by the directors and executive officers in investigating or defending any such action, suit, or proceeding.

The Registrant has obtained insurance policies under which, subject to the limitations of the policies, coverage is provided to its directors and executive officers against loss arising from claims made by reason of breach of fiduciary duty or other wrongful acts as a director or executive officer, including claims relating to public securities matters, and to the Registrant with respect to payments that may be made by the Registrant to these directors and executive officers pursuant to the Registrant's indemnification obligations or otherwise as a matter of law.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

EXHIBIT INDEX

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation of the Registrant (Incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on October 5, 2017 (File No. 001-38219)).
3.2	Amended and Restated By-laws of the Registrant (Incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed on June 12, 2020 (File No. 001-38219)).
4.1	Specimen Common Stock Certificate (Incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-220299)).
4.2	Second Amended and Restated Investors' Rights Agreement among Deciphera Pharmaceuticals, LLC and certain of its shareholders, dated May 26, 2017 (Incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-220299)).
4.3	Registration Rights Agreement by and among the Registrant and certain of its stockholders, dated October 2, 2017 (Incorporated by reference to Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 14, 2017 (File No. 001-38219)).
4.4	Description of Securities (Incorporated by reference to Exhibit 4.4 to the Registrant's Annual Report on Form 10-K filed on March 9, 2020 (File No. 001-38219)).
5.1*	Opinion of Goodwin Procter LLP.
23.1*	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.
23.2*	Consent of Goodwin Procter LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (included on signature page).
99.1	2017 Stock Option and Incentive Plan and form of award agreements thereunder (Incorporated by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-220299)).
99.2	Form of Incentive Stock Option Agreement under 2017 Stock Option and Incentive Plan (Incorporated by reference to Exhibit 10.3 to the Registrant's Annual Report on Form 10-K filed on February 9, 2021 (File No. 001-38219).
99.3	Form of Non-Qualified Stock Option Agreement for Company Employees under 2017 Stock Option and Incentive Plan (Incorporated by reference to Exhibit 10.4 to the Registrant's Annual Report on Form 10-K filed on February 9, 2021 (File No. 001-38219).

99.4 Form of Restricted Stock Unit Award Agreement for Company Employees under 2017 Stock Option and Incentive Plan (Incorporated by reference to Exhibit 10.5 to the Registrant's Annual Report on Form 10-K filed on February 9, 2021 (File No. 001-38219).

99.5	Form of Non-Qualified Stock Option Agreement for Non-U.S. Optionees under 2017 Stock Option and Incentive Plan (Incorporated by
	reference to Exhibit 10.6 to the Registrant's Annual Report on Form 10-K filed on February 9, 2021 (File No. 001-38219).

- 99.6 Form of Restricted Stock Unit Award Agreement for Non-U.S. Grantees under 2017 Stock Option and Incentive Plan (Incorporated by reference to Exhibit 10.7 to the Registrant's Annual Report on Form 10-K filed on February 9, 2021 (File No. 001-38219).
- 99.7 Form of Non-Qualified Stock Option Agreement for Non-Employee Directors under 2017 Stock Option and Incentive Plan (Incorporated by reference to Exhibit 10.8 to the Registrant's Annual Report on Form 10-K filed on February 9, 2021 (File No. 001-38219).
- 99.8 2017 Employee Stock Purchase Plan (Incorporated by reference to Exhibit 10.3 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-220299)).
- 99.9 <u>2022 Inducement Plan (Incorporated by reference to Exhibit 10.9 to the Registrant' Annual Report on Form 10-K filed on February 8, 2022</u> (File No. 001-38219)).
- 99.10 Form of Non-Qualified Stock Option Agreement for Company Employees under 2022 Inducement Plan (Incorporated by reference to Exhibit 10.10 to the Registrant' Annual Report on Form 10-K filed on February 8, 2022 (File No. 001-38219)).
- 99.11 Form of Restricted Stock Unit Award Agreement for Company Employees under 2022 Inducement Plan (Incorporated by reference to Exhibit 10.11 to the Registrant' Annual Report on Form 10-K filed on February 8, 2022 (File No. 001-38219)).
- 107* <u>Filing Fee Table.</u>
- Filed herewith.

Item 9. Undertakings.

- (a) The undersigned Registrant hereby undertakes:
- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:
- (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) above do not apply if the registration statement is on Form S-8, and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(h) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Waltham, Commonwealth of Massachusetts, on the 8th day of February, 2022.

DECIPHERA PHARMACEUTICALS, INC.

By: /s/ Steven L. Hoerter

Steven L. Hoerter President and Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Steven L. Hoerter and Thomas P. Kelly his or her true and lawful attorney-in-fact and agent with full power of substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents or any of them, or his, her or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the date indicated.

Name	Title	Date	
/s/ Steven L. Hoerter Steven L. Hoerter	President, Chief Executive Officer and Director (Principal Executive Officer)	February 8, 2022	
/s/ Thomas P. Kelly Thomas P. Kelly	Executive Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	February 8, 2022	
/s/ Patricia L. Allen Patricia L. Allen	Director	February 8, 2022	
/s/ Edward J. Benz, Jr. Edward J. Benz, Jr., M.D.	Director	February 8, 2022	
/s/ James A. Bristol James A Bristol, Ph.D.	Director	February 8, 2022	
/s/ Frank S. Friedman Frank S. Friedman	Director	February 8, 2022	

/s/ Susan L. Kelley Susan L. Kelley, M.D.	Director	February 8, 2022
/s/ John R. Martin John R. Martin	Director	February 8, 2022
/s/ Ron Squarer Ron Squarer	Director	February 8, 2022
/s/ Dennis L. Walsh Dennis L. Walsh	Director	February 8, 2022

Deciphera Pharmaceuticals, Inc. 200 Smith Street Waltham, MA 02451

Re: Securities Being Registered under Registration Statement on Form S-8

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-8 (the "Registration Statement") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), on or about the date hereof relating to an aggregate of 3,541,985 shares (the "Shares") of Common Stock, \$0.01 par value per share ("Common Stock"), of Deciphera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), that may be issued pursuant to the Company's 2017 Stock Option and Incentive Plan, 2017 Employee Stock Purchase Plan and 2022 Inducement Plan (collectively, the "Plans").

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinion set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law.

For purposes of the opinion set forth below, we have assumed that no event occurs that causes the number of authorized shares of Common Stock available for issuance by the Company to be less than the number of then unissued Shares.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, upon issuance and delivery against payment therefor in accordance with the terms of the Plans, will be validly issued, fully paid and nonassessable.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of Deciphera Pharmaceuticals, Inc. of our report dated February 8, 2022 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in Deciphera Pharmaceuticals, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2021.

/s/ PricewaterhouseCoopers LLP Boston, MA February 8, 2022

Calculation of Filing Fee Tables

Form S-8 (Form Type)

Deciphera Pharmaceuticals, Inc. (Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Share (2)		Fee Rate	Amount of Registration Fee (2)
Equity	2017 Stock Option and Incentive Plan		2 2 41 005 J (2)	ф п ог	#10 D0 4 F0D	0000007	#1 70 4 DC
	Common Stock, \$0.01 par value per share	45/(h)	2,341,985 shares (3)	\$7.85	\$18,384,582	.0000927	\$1,/04.26
Equity	2017 Employee Stock Purchase Plan						
	Common Stock, \$0.01 par value per share	457(h)	400,000 shares (4)	\$7.85	\$3,140,000	.0000927	\$291.08
Equity	2022 Inducement Plan						
	Common Stock, \$0.01 par value per share	457(h)	800,000 shares (5)	\$7.85	\$6,280,000	.0000927	\$582.16
Total Offering Amounts				\$27,804,582		\$2,577.50	
Total Fee Offsets						\$0	
Net Fee Due						\$2,577.50	

⁽¹⁾ Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of common stock which become issuable under the above-named plans by reason of any stock dividend, stock split, recapitalization or any other similar transaction effected without the receipt of consideration which results in an increase in the number of our outstanding shares of common stock. Pursuant to Rule 416(c) under the Securities Act, this Registration Statement shall also cover an indeterminate amount of interests to be offered or sold pursuant to the employee benefit plans described herein.

⁽²⁾ Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) of the Securities Act, and based on \$7.85, the average of the high and low sale prices of the Registrant's common stock as reported on the Nasdaq Global Select Market on February 4, 2022.

⁽³⁾ Consists of 2,341,985 shares of Common Stock that may become issuable under the Registrant's 2017 Stock Option and Incentive Plan pursuant to its terms.

⁽⁴⁾ Consists of 400,000 shares of Common Stock that may become issuable under the Registrant's 2017 Employee Stock Purchase Plan pursuant to its terms.

⁽⁵⁾ Consists of 800,000 shares of Common Stock that may become issuable under the Registrant's 2022 Inducement Plan pursuant to its terms.