

CONFIDENTIAL TREATMENT REQUESTED BY DECIPHERA PHARMACEUTICALS, INC.

CERTAIN PORTIONS OF THIS LETTER AS FILED VIA EDGAR HAVE BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED WITH RESPECT TO THE OMITTED PORTIONS. OMITTED INFORMATION HAS BEEN REPLACED IN THIS LETTER AS FILED VIA EDGAR WITH A PLACEHOLDER IDENTIFIED BY THE MARK “[****].”

September 7, 2017

VIA EDGAR

U.S. Securities and Exchange Commission
Office of Healthcare and Insurance
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549
Attention: Suzanne Hayes
Christine Westbrook**Re: Deciphera Pharmaceuticals, Inc.
Registration Statement on Form S-1
Registration No. 333-220299**

Ladies and Gentlemen:

On behalf of Deciphera Pharmaceuticals, Inc. (the “Company”), in response to comments from the staff (the “Staff”) of the Securities and Exchange Commission (the “Commission”) received by letter dated July 21, 2017 (the “Comment Letter”) relating to the Company’s Registration Statement on Form S-1, originally confidentially submitted to the Commission on June 23, 2017, resubmitted to the Commission on July 28, 2017 and August 15, 2017, and subsequently filed by the Company with the Commission on September 1, 2017 (File No. 333-220299) (the “Registration Statement”), we submit this supplemental letter to further address comment 7 of the Comment Letter.

Because of the commercially sensitive nature of information contained herein, this submission is accompanied by the Company's request for confidential treatment for selected portions of this letter. The Company has filed a separate letter with the Office of Freedom of Information and Privacy Act Operations in connection with the confidential treatment request, pursuant to Rule 83 of the Commission's Rules on Information and Requests, 17 C.F.R. § 200.83. For the Staff's reference, we have enclosed a copy of the Company's letter to the Office of Freedom of Information and Privacy Act Operations.

For the convenience of the Staff, we have recited the prior comment from the Staff in italicized type and have followed the comment with the Company's response.

- 7. Once you have an estimated offering price or range, please explain to us the reasons for any differences between the recent valuations of your common stock leading up to the IPO and the estimated offering price. This information will help facilitate our review of your accounting for equity issuances including stock compensation and beneficial conversion features.*

The Company respectfully submits the below additional information to assist the Staff in its review of the Company's position with respect to its determination of the fair value of its common shares underlying its outstanding equity awards and the reasons for the differences between the recent valuations of its common shares and the estimated offering price for its initial public offering ("IPO").

Preliminary IPO Price Range

The Company advises the Staff that it preliminarily estimates a price range of approximately \$[****] to \$[****] per share (the "Price Range"), before giving effect to an anticipated exchange ratio of 1-for-[****] shares of Deciphera Pharmaceuticals, LLC for shares of Deciphera Pharmaceuticals, Inc. as part of the Conversion described in the Registration Statement.

As is typical in IPOs, the Price Range was not derived using a formal determination of fair value, but was determined by negotiations between the Company and the underwriters. Among the factors that were considered in setting the Price Range were the following:

- the general conditions of the securities market and the recent market prices of, and the demand for, publicly traded common stock of comparable companies;
- the Company's financial condition and prospects;
- estimates of business potential and earnings prospects for the Company and the industry in which it operates;

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- recent performance of IPOs of companies in the biotechnology sector; and
- input received from the lead underwriters, including discussions that took place on August 31, 2017 with senior management of the Company and its board of directors (the “Board”).

The Price Range does not take into account the current lack of liquidity for the Company’s common shares and assumes a successful IPO with no weighting attributed to any other outcome for the Company’s business, such as remaining a privately held company or being sold in an acquisition transaction. Prior to August 31, 2017, the Company and underwriters had not had any specific discussions regarding the Price Range.

Summary of Recent Equity Awards

The Company is providing the following supplemental information to the Staff to facilitate its review process. Since April 1, 2017, the Company has issued the following equity awards to its employees, consultants and members of its board of directors, in the form of stock options and stock appreciation rights (“SARs”), as indicated:

<u>Date of Grant</u>	<u>Type of Award</u>	<u>Number of Shares Subject to Awards Granted</u>	<u>Per Share Exercise or Measurement Price of Award</u>	<u>Fair Value per Common Share on Grant Date</u>
June 4, 2017	Option	115,132	\$34.60	\$34.60
June 4, 2017	SAR	49,830	\$34.60	\$34.60
June 21, 2017	SAR	5,400	\$34.60	\$34.60
August 29, 2017	SAR	4,250	\$59.16	\$59.16

Historic Determinations of Fair Value of Common Shares

As there has been no public market for the Company’s common shares to date, the estimated fair value of its common shares has been determined by the Board as of the date of each award grant, with input from management, considering the Company’s most recent third-party valuations of its common shares and the Board’s assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent third-party valuation through the date of the grant. The Board considered various objective and subjective factors to determine the fair value of the Company’s common shares as of each grant date, including:

- the prices at which the Company sold shares of preferred shares and the superior rights and preferences of the preferred shares relative to the Company’s common shares at the time of each grant;

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- the progress of the Company's research and development programs, including the status of preclinical studies and clinical trials for its drug candidates;
- the Company's stage of development and commercialization and the Company's business strategy;
- external market conditions affecting the biotechnology industry, and trends within the biotechnology industry;
- the Company's financial position, including cash on hand, and its historical and forecasted performance and operating results;
- the lack of an active public market for the Company's common shares and preferred shares;
- the likelihood of achieving a liquidity event, such as an IPO or a sale of the Company in light of prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in the biopharmaceutical industry.

The Company obtained third-party valuations of its common shares as of April 30, 2017 and July 31, 2017. The third-party valuations resulted in valuations of the Company's common shares of \$34.60 per share as of April 30, 2017 and \$59.16 per share as of July 31, 2017.

These third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. The Company's common share valuations were prepared using a hybrid method, which used market approaches to estimate the Company's total equity value. The hybrid method is a probability-weighted expected return method ("PWERM") where the equity value in one or more of the scenarios is calculated using an option pricing method ("OPM"). The OPM treats common shares and preferred shares as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common shares have value only if the funds available for distribution to shareholders exceeded the value of the preferred shares liquidation preferences at the time of the liquidity event, such as a strategic sale or a merger. The PWERM is a scenario-based methodology that estimates the fair value of common shares based upon an analysis of future values for the Company, assuming various outcomes. The common share value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of shares. The future value of the common shares under each outcome is discounted back to the valuation date at an

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appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common shares.

June 2017 Grants

On June 4, 2017 and June 21, 2017, the Company granted stock options and SARs to purchase an aggregate of 170,362 common shares (the “June 2017 Grants”). The Company determined that the fair value of its common shares on the grant dates of the June 2017 Grants was \$34.60 per share based, in part, on a third-party valuation of the Company’s common shares performed as of April 30, 2017 (the “April 2017 Valuation”), which indicated that the fair value of the Company’s common shares as of April 30, 2017 was \$34.60 per share.

The April 2017 Valuation considered three future-event scenarios: a remain private scenario, a near-term IPO scenario in which the Company would complete an IPO by [****] and a longer-term IPO scenario in which the Company would complete an IPO by [****]. The two IPO scenarios assumed that all preferred shares would convert into common shares and would no longer have the liquidation preferences and preferential rights attributable to the preferred shares as compared to the common shares prior to the IPO. The April 2017 Valuation probability weighted the remain private scenario at [****]% and the IPO scenario at [****]% (with an equal probability assigned to the occurrence of the near-term IPO scenario and the longer-term IPO scenario) based on the Company’s assessment of its development pipeline and market conditions. The [****]% weighting of the IPO scenario was selected due to the high perceived risk, at that time, of successfully completing an IPO in the near and longer term.

The April 2017 Valuation was finalized and received by the Company on May 31, 2017 (i.e., subsequent to the May 26, 2017 completion of the Company’s series C preferred share financing) and was prepared taking into account the series C preferred financing at the sale price of \$75.76 per series C preferred share. In particular, the April 2017 Valuation used this price as the basis to estimate the equity value of the Company in each of the remain private and two IPO scenarios considered in the April 2017 Valuation, as follows:

- In the remain private scenario, the Company determined its equity value using an OPM backsolve approach that was based on the actual price paid for its series C preferred shares in the May 26, 2017 contemporaneous, arm’s-length transaction with new and existing investors.
- In each of the two IPO scenarios, the Company determined its equity value by applying the guideline public company method, which used multiples of step-ups in enterprise value at time of IPO from the most recent round of preferred stock financing of biotechnology companies that recently completed IPOs. Based on the observed valuation multiples in this group of companies, the Company applied an appropriate step-up multiple to its enterprise price value implied by the actual price paid for its series C preferred shares in the financing transaction completed on May 26, 2017.

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For the three future-event scenarios, the Company then applied a discount for lack of marketability of [****]% in the remain private scenario, of [****]% in the near-term IPO scenario and of [****]% in the longer-term IPO scenario, each determined by a put option analysis, which considered the timing of each future-event scenario. The April 2017 Valuation resulted in a valuation of the Company's common shares of \$34.60 per share. Based on that result, as well as consideration of other qualitative factors, the Board determined that the fair value of the Company's common shares was \$34.60 per share as of June 4, 2017. From June 4, 2017 to June 21, 2017, the Company continued to operate its business in the ordinary course and there were no significant developments in its business. As a result, the Board determined that the fair value of the Company's common shares remained \$34.60 per share from June 4, 2017 to June 21, 2017.

In contrast, if the Company had applied a weighting of 100% to the IPO scenario (with an equal probability assigned to the occurrence of the near-term IPO scenario and the longer-term IPO scenario), the fair value of the Company's common shares in the April 2017 Valuation would have been \$[****] per share (before giving effect to any discount for lack of marketability).

August 2017 Grants

On August 29, 2017, the Company granted SARs relating to an aggregate of 4,250 common shares (the "August 2017 Grants"). The Company determined that the fair value of its common shares on the grant date of the August 2017 Grants was \$59.16 per share based, in part, on a third-party valuation of the Company's common shares performed as of July 31, 2017 (the "July 2017 Valuation," and together with the April 2017 Valuation, the "Valuations"), which indicated that the fair value of the Company's common shares as of July 31, 2017 was \$59.16 per share.

Consistent with the April 2017 Valuation, the July 2017 Valuation considered three future event scenarios: a remain private scenario, a near-term IPO scenario in which the Company would complete an IPO by [****] and a longer-term IPO scenario in which the Company would complete an IPO by [****]. The July 2017 Valuation probability weighted the remain private scenario at [****]% and the IPO scenario at [****]% (with an equal probability assigned to the occurrence of the near-term IPO scenario and the longer-term IPO scenario) based on the Company's assessment of its development pipeline and market conditions and its progress in undertaking an IPO. The increase in the probability weighting of an IPO scenario from [****]% in the April 2017 Valuation to [****]% in the July 2017 Valuation was due primarily to the following factors, which significantly increased the probability of the Company successfully completing an IPO:

- feedback from the Company's End-of-Phase 1 meeting with the U.S. Food and Drug Administration ("FDA") related to DCC-2618, the Company's lead product candidate, as a result of which the Company submitted a protocol for its proposed Phase 3 trial for DCC-2618 in August 2017;

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- feedback from potential investors and the underwriters from the Company's testing-the-waters meetings in July and August 2017, in which the Company discussed recent developments, including its data releases at the American Society of Clinical Oncology conference in June 2017;
- receipt of orphan drug designation for DCC-2618 for the treatment of glioblastoma multiforme and anaplastic astrocytoma from the FDA in August 2017;
- business developments impacting the Company, including data releases at the American Society of Clinical Oncology conference in June 2017 and its planned data releases at the European Society for Medical Oncology in early September 2017;
- continued progress toward the completion of the Company's IPO, including the submission of three confidential draft registration statements through August 15, 2017; and
- the general condition of the securities markets and the recent market prices of, and the demand for, publicly traded common stock of generally comparable companies, including a favorable trend of successfully completed initial public offerings of comparable companies, compared to prior periods.

In the remain private scenario of the July 2017 Valuation, the Company determined its equity value using an OPM backsolve approach that was based on the actual price paid for series C preferred shares in the financing transaction completed on May 26, 2017. In each of the two IPO scenarios, the Company determined its equity value by applying the guideline public company method, which used multiples of step-ups in enterprise value at time of IPO from the most recent round of preferred stock financing of biotechnology companies that recently completed IPOs. Based on the observed valuation multiples in this group of companies, the Company applied an appropriate step-up multiple to its enterprise price value implied by the actual price paid for its series C preferred shares in the financing completed on May 26, 2017.

For the three future-event scenarios, the Company then applied a discount for lack of marketability of [****]% in the remain private scenario, of [****]% in the near-term IPO scenario and of [****]% in the longer-term IPO scenario, each determined by a put option analysis, which considered the timing of each future-event scenario. The July 2017 Valuation resulted in a valuation of the Company's common shares of \$59.16 per share. Based on that result, as well as consideration of other qualitative factors, the Board determined that the fair value of the Company's common shares was \$59.16 per share as of August 29, 2017.

In contrast, if the Company had applied a weighting of 100% to the IPO scenario (with an equal probability assigned to the occurrence of the near-term IPO scenario and the longer-term IPO scenario), the fair value of the Company's common shares in the July 2017 Valuation would have been \$[****] per share (before giving effect to any discount for lack of marketability).

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Summary

Based on the Price Range provided above, the current status of the financial markets and continued uncertainty as to whether the Company will be able to complete its planned IPO within the Price Range, or at all, the Company believes that the fair value of its common shares indicated in the Valuations, which were used, in part, to determine the grant-date fair value of its common shares for the June 2017 Grants and the August 2017 Grants, are reasonable in light of the Company's and the underwriters' preliminary estimates of the Price Range.

The Price Range necessarily assumes that the IPO has occurred and that a public market for the Company's common shares has been created, and, therefore, excludes any discount for lack of marketability of the Company's common shares or impact of the time value of money, which were appropriately taken into account in the Valuations. If the Company had applied a weighting of 100% to the IPO scenario, the fair value of the Company's common shares in the April 2017 Valuation and the July 2017 Valuation would have been \$[****] and \$[****] per share, respectively (before giving effect to any discount for lack of marketability).

The Company believes that the difference between the fair value of its common shares indicated in the IPO scenario of the April 2017 Valuation and July 2017 Valuation of \$[****] and \$[****] per share and the estimated Price Range of \$[****] to \$[****] per share is due primarily to the fact that the equity value in the Valuations did not reflect any input received from the lead underwriters, including discussions that took place on August 31, 2017 with senior management of the Company and the Board.

The Company respectfully submits that the deemed per share fair values used as the basis for determining the share-based compensation in connection with its grants of equity awards are reasonable and appropriate for the reasons described herein and in the Registration Statement.

We hereby further request, pursuant to Rule 418(b) under the Securities Act of 1933, as amended, the return of the unredacted version of this letter. The Company believes that the return of the supplemental information contained in this letter will protect the interests of investors and is consistent with the provisions of the Freedom of Information Act by maintaining in confidence the potential valuation of the Company that may, if disseminated, negatively impact the trading in the common shares of the Company following the IPO. The Company advises the Staff that it has not filed the supplemental information subject to this request in electronic format. Please return this letter to the Company, in care of the undersigned, a responsible representative of the Company, at The New York Times Building, 620 Eighth Avenue, New York, New York 10018.

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If you have any questions or comments with regard to this matter, please do not hesitate to contact the undersigned at (212) 813-8853.

Respectfully submitted,

GOODWIN PROCTER LLP

By _____ /s/ Edwin M. O'Connor
Edwin M. O'Connor

cc: Michael D. Taylor, *Deciphera Pharmaceuticals, Inc.*
Thomas P. Kelly, *Deciphera Pharmaceuticals, Inc.*
Richard A. Hoffman, *Goodwin Procter LLP*
Richard D. Truesdell, Jr., *Davis Polk & Wardwell LLP*
Marcel R. Fausten, *Davis Polk & Wardwell LLP*

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