CERTAIN PORTIONS OF THIS LETTER AS FILED VIA EDGAR HAVE BEEN OMITTED AND FILED SEPARATELY WITH THE COMMISSION. CONFIDENTIAL TREATMENT HAS BEEN REQUESTED BY THE COMPANY 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 "[***]."

October 8, 2021

By EDGAR Submission

U.S. Securities and Exchange Commission Division of Corporation Finance Office of Life Sciences 100 F Street, N.E. Washington, D.C. 20549 Attn: Jenn Do, Angela Connell

Re: Deciphera Pharmaceuticals, Inc.

Form 10-K for the Fiscal Year Ended December 31, 2020 Filed February 9, 2021 File No. 001-38219

Dear Ladies and Gentlemen:

Deciphera Pharmaceuticals, Inc. ("Deciphera" or the "Company") is submitting this letter in response to comments of the staff of the Division of Corporation Finance (the "Staff") of the Securities and Exchange Commission (the "Commission"), received by letter dated September 24, 2021 (the "Comment Letter"), relating to the Company's Form 10-K for the fiscal year ended December 31, 2020 filed with the Commission on February 9, 2021 (the "Form 10-K"). For your convenience, the Staff's comment is reproduced in bold type below, followed by the Company's response thereto.

Form 10-K for the fiscal year ended December 31, 2020

Management's Discussion and Analysis, page 104 Results of Operations, page 111

1. Cost of sales were only \$0.2 million for the year ended December 31, 2020, resulting in a gross margin percentage of 99.4%. You state on page 112 that external manufacturing costs associated with QINLOCK inventory prior to FDA approval were previously expensed as research and development expenses and, therefore, are

not included in cost of sales during the year then ended. Please explain the following and consider providing additional disclosure in your future filings:

- the amount of estimated revenues represented by inventory on hand at December 31, 2020 for which manufacturing costs were expensed in prior periods as research and development expenses (i.e., "zero cost inventories");
- when you expect to finish selling the zero cost inventories;
- the shelf life of your inventory and your consideration of whether or not any additional inventory will be determined to be obsolete in future periods; and
- your estimate of what the gross margin percentage will be after the zero cost inventories are sold.

The Company respectfully acknowledges the Staff's comments and provides the following information in response:

- the amount of estimated revenues represented by inventory on hand at December 31, 2020 for which manufacturing costs were expensed in prior periods as research and development expenses (i.e., "zero cost inventories");
- when you expect to finish selling the zero cost inventories;

As of December 31, 2020, the Company had zero cost inventories of QINLOCK® (ripretinib) consisting of filled drug product bottles and unbottled tablets, which based on the then-current sales trends and forecasts for QINLOCK the Company anticipated would be sold in the United States ("U.S.") during 2021 and into 2022. The Company respectfully advises the Staff that its disclosures since the Form 10-K, including its most recent Quarterly Report on Form 10-Q for the period ended June 30, 2021 (the "Q2 2021 Form 10-Q"), included additional disclosure in Management's Discussion and Analysis stating that the cost of net product sales in the U.S. (which is the geography where the zero cost inventories are sold) will not be significant through at least 2021. In response to the Staff's comment, the Company will update its disclosures, beginning with its Quarterly Report on Form 10-Q for the period ended September 30, 2021, to provide the time period through which it expects to continue to sell its zero cost inventories. As the updated disclosure will state the Company's expectation for when its zero cost inventories will be sold, the Company respectfully submits that it does not believe that disclosure regarding the revenues represented by such inventories will provide meaningful information to investors as the timing of and geography from which the Company will be recognizing revenues on such sales will be stated in the Company's proposed disclosures and the remaining period to sell such zero cost inventories is within a year. To facilitate the Staff's review, attached as Appendix A to this letter is a copy of such proposed disclosures based on the Q2 2021 Form 10-Q.

• the shelf life of your inventory and your consideration of whether or not any additional inventory will be determined to be obsolete in future periods; and

The shelf life of QINLOCK as of December 31, 2020 was 18 months in the U.S., which is beyond the period when the Company believes its zero cost inventory will be sold as discussed

above. Further, as of June 30, 2021, the U.S. Food and Drug Administration approved an increase to the shelf life of unlabeled QINLOCK inventory to [***] months in the U.S.

The Company respectfully notes that on page 139 in Note 5, Inventory, in the Company's Form 10-K, it disclosed that it had not written off any inventory amounts due to excess, obsolescence, unmarketability, or other reasons for the year then ended. In consideration of whether any additional inventory will be determined to be obsolete in future periods, on page 132 in the subsection entitled "Inventory" in Note 2, Summary of Significant Accounting Policies in the Company's Form 10-K, the Company describes its assessment of the recoverability of capitalized inventories conducted during each reporting period and that it writes down any excess or obsolete inventory to its net realizable value in the period in which the impairment is first identified. In addition, the Company has continued to disclose inventory amounts written off due to excess, obsolescence, unmarketability, or other reasons in its recent filings, including on page 19 in Note 4, Inventory, of the Q2 2021 Form 10-Q, where such amount was disclosed as less than \$0.1 million for the six months ended June 30, 2021.

The amount of inventory written down as a result of excess, obsolescence, unmarketability, or other reasons has been immaterial since the Company began commercial sales of QINLOCK. Additionally, as of June 30, 2021, the Company anticipated that any additional inventory that is determined to be obsolete in future periods will continue to be immaterial to the Company. Together with its existing disclosures regarding the Company's inventory realizability assessment policy and inventory amounts written off due to excess, obsolescence, unmarketability, or other reasons, the Company respectfully submits that it believes its disclosures regarding obsolescence provide the information necessary for investors to understand the Company's policy and expectations with respect thereto. The Company will continue to monitor the realizability of its inventory, and if its expectations with respect thereto should change, it will consider whether additional disclosures are warranted.

• your estimate of what the gross margin percentage will be after the zero cost inventories are sold.

The Company estimates that once zero cost inventories are fully sold, the manufacturing costs for QINLOCK as a percentage of total net product revenue will be in the [***] percentage range. The Company does not expect that the cost of sales as a percentage of net sales of QINLOCK will increase significantly once it commences sales of inventories which will reflect the full cost of manufacturing ("non-zero cost inventories"). As set forth in Appendix A attached hereto, the Company will update its disclosures to state that it does not expect cost of sales as a percentage of net sales to increase significantly after it has sold all of the zero cost inventories and commenced sales of non-zero cost inventories.

If you or any other member of the Staff have any questions with regard to the foregoing responses, would like to discuss any of the matters covered in this letter, or otherwise require additional information, please do not hesitate to contact the undesigned at (781) 209-6400.

Sincerely,

/s/ Thomas P. Kelly Thomas P. Kelly Chief Financial Officer

cc: Steven L. Hoerter, Chief Executive Officer, Deciphera Pharmaceuticals, Inc. Jeffrey Held, General Counsel, Deciphera Pharmaceuticals, Inc. Sarah Ashfaq, Goodwin Procter LLP

Appendix A

Underlined material is planned additional disclosure and struck out material is planned deleted disclosure to be included in the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2021 (with corresponding revisions to be included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021):

MD&A - Components of Our Results of Operations

Cost of Sales

Our cost of sales includes external costs of producing and distributing inventories that are related to product revenue during the respective period of the associated sales. In addition, shipping and handling costs for product shipments are recorded in cost of sales as incurred. Further, cost of sales includes the external costs of producing and distributing commercial inventories sold under the Zai Supply Agreement. Cost of sales also includes charges related to inventory written down as a result of excess, obsolescence, unmarketability, or other reasons.

Cost of sales for newly launched products, such as QINLOCK, will not include the full cost of manufacturing be significant until the initial pre-launch inventory is depleted, and additional inventory is manufactured and sold. As a result, tThe gross margin on sales of QINLOCK for the three and nine months ended September 30, 2021 and 2020 was enhanced by sales of the initial pre-launch inventory, and therefore, use of active pharmaceutical ingredients and components that were previously expensed as research and development expenses prior to the launch of QINLOCK, referred to as zero cost inventories. However, we do not expect that the cost of sales as a percentage of net sales of QINLOCK will increase significantly after we have sold all zero cost inventories and commenced the sales of inventories which will reflect the full cost of manufacturing.

MD&A - Results of Operations

[Preceding text omitted]

Cost of Sales

We <u>do not</u> expect our cost of sales for QINLOCK to increase <u>significantly</u> as a percentage of net sales in future periods as we continue to produce inventory for future sales, which will reflect the full cost of manufacturing, and then sell such inventory. We expect to continue to sell the zero cost inventories of QINLOCK that cost of net product sales in the U.S. <u>will not be significant through at least during 2021 and into 2022</u>.