

September 24, 2021

Thomas P. Kelly
Chief Financial Officer
Deciphera Pharmaceuticals, Inc.
200 Smith Street
Waltham, MA 02451

Pharmaceuticals, Inc.
fiscal year ended December 31, 2020
2021

Re: Deciphera
Form 10-K for the
Filed February 9,
File No. 1-38219

Dear Mr. Kelly:

We have limited our review of your filing to the financial statements and related disclosures and have the following comment. We may ask you to provide us with information so we may better understand your disclosure.

Please respond to this comment within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comment applies to your facts and circumstances, please tell us why in your response.

After reviewing your response to this comment, we may have additional comments.

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

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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.

In closing, we remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or

absence of action by the staff.

You may contact Jenn Do at (202) 551-3743 or Angela Connell at (202) 551-3426 with any questions.

FirstName LastNameThomas P. Kelly
Comapany NameDeciphera Pharmaceuticals, Inc.

Corporation Finance
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Sciences
FirstName LastName

Sincerely,
Division of
Office of Life