UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

July 21, 2017

Michael D. Taylor
President and Chief Executive Officer
Deciphera Pharmaceuticals, LLC
500 Totten Pond Road
Waltham, MA 02451

Re: Deciphera Pharmaceuticals, LLC
Draft Registration Statement on Form S-1
Submitted June 23, 2017
0001654151

Dear Dr. Taylor:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

DRS S-1

Prospectus Summary, page 1

1. Please revise your pipeline development chart to include all phases of clinical development that must be completed prior to obtaining marketing approval for the specified target. Also make similar changes to your chart on page 86.

2. Please balance the stated benefits you believe your proprietary kinase switch control inhibitor platform offers with an equally prominent discussion of its disadvantages.

Our Drug Candidates, page 3

3. We note your disclosure regarding your belief that results from your Phase 1 trial of DCC-2618 provide strong evidence of the power of your kinase switch control inhibitor platform. Please balance your disclosure on page 3 and throughout your prospectus to make clear that any observations regarding the efficacy of your drug candidates are your own and that later-stage trials may not produce similar disease control rate outcomes. Similarly, we note that your statement of belief on page 93 regarding the single-agent activity of DCC-2618 appears to be supported by PR observed in three patients and your conclusion at the top of page 95 is based on the evaluation of 12 patients. Please revise your disclosure to place these statements in appropriate context given that clinical trials to date have not enrolled large numbers of patients. Lastly, please revise the charts on page 101 to provide an understanding of how to interpret the relative value of the potency figures reported in each of the last two columns.

Implications of being an emerging growth company, page 6

4. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

Market, Industry and Other Data, page 54

5. Please revise your disclosure to clarify that your are liable for all information included in the registration statement.

Use of Proceeds, page 55

6. It appears from your disclosure that the proceeds from the offering will not be sufficient to fund development of your product candidates through regulatory approval and commercialization. Please also disclose the sources of other funds needed to reach regulatory approval and commercialization for each product candidate. Refer to Instruction 3 to Item 504 of Regulation S-K.

Grants of Share Based Awards, page 72

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.

Business, page 81

8. Please revise your disclosure on page 84 to clarify what you mean that you have “solved

more than 100 co-crystal structures of [your] compounds bound into the switch pocket…"

Clinical Development of DCC-2618, page 89

9. Please tell us why you are not conducting Phase 2 trials. Additionally, tell us about any communications you have had with the FDA about the decision to go straight to Phase 3 trials.

General

10. Please provide us proofs of all graphics, visual, or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.

You may contact Ibolya Ignat at (202) 551-3636 or Sharon Blume at (202) 551-3474 if you have questions regarding comments on the financial statements and related matters. Please contact Christine Westbrook at (202) 551-5019 or Suzanne Hayes at (202) 551-3675 with any other questions.

Division of Corporation Finance
Office of Healthcare and
Insurance

cc: Edwin O'Connor, Esq.