

**VIA EDGAR**

October 10, 2018

United States Securities and Exchange Commission  
Division of Corporation Finance  
100 F Street, N.E.  
Washington, D.C. 20549

**Re: Deciphera Pharmaceuticals, Inc.  
Acceleration Request for Registration Statement on Form S-3  
File No. 333-227638**

Ladies and Gentlemen:

Pursuant to Rule 461 under the Securities Act of 1933, as amended (the “**Act**”), Deciphera Pharmaceuticals, Inc. (the “**Company**”) hereby requests that the effective date of the above-referenced registration statement (the “**Registration Statement**”) be accelerated to October 12, 2018, at 4:30 pm Eastern Time, or as soon thereafter as practicable, unless we or our outside counsel, Goodwin Procter LLP, request by telephone that such Registration Statement be declared effective at some other time. In making this acceleration request, the Company acknowledges that it is aware of its responsibilities under the Act.

If you have any questions regarding this request, please contact Sarah Ashfaq of Goodwin Procter LLP at (212) 459-7238.

Sincerely,

DECIPHERA PHARMACEUTICALS, INC.

/s/ Michael D. Taylor

Name: Michael D. Taylor

Title: Chief Executive Officer

cc: Thomas P. Kelly, *Deciphera Pharmaceuticals, Inc.*  
Jeff Held, *Deciphera Pharmaceuticals, Inc.*  
Richard Hoffman, *Goodwin Procter LLP*  
Edwin O'Connor, *Goodwin Procter LLP*