

VIA EDGAR

June 22, 2021

Office of Life Sciences
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549
Attention: Kristin Lochhead
Daniel Gordon
Jane Park
Jeffrey Gabor

**Re: Graphite Bio, Inc.
Acceleration Request for Registration Statement on Form S-1
File No. 333-256838**

Dear Ms. Park,

Pursuant to Rule 461 under the Securities Act of 1933, as amended (the “**Act**”), Graphite Bio, Inc. (the “**Company**”) hereby requests that the effective date of the above-referenced registration statement (the “**Registration Statement**”) be accelerated to June 24, 2021, at 4:00 p.m., 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.

Once the Registration Statement is effective, please orally confirm the event with our counsel, Goodwin Procter LLP by calling Shoaib Ghias at (510) 759-1494. We also respectfully request that a copy of the written order from the Securities and Exchange Commission verifying the effective time and date of the Registration Statement be sent to our counsel, Goodwin Procter LLP, Attention: Shoaib Ghias, by facsimile to (415) 677-9041.

If you have any questions regarding this request, please contact Shoaib Ghias of Goodwin Procter LLP at (510) 759-1494.

Sincerely,

GRAPHITE BIO, INC.

/s/ Josh Lehrer

Josh Lehrer, M.D.
Chief Executive Officer

cc: Josh Lehrer, *Graphite Bio, Inc.*
Maggie Wong, *Goodwin Procter LLP*
Shoaib Ghias, *Goodwin Procter LLP*
Mitchell S. Bloom, *Goodwin Procter LLP*
Charlie Kim, *Cooley LLP*
Kristin VanderPas, *Cooley LLP*
Denny Won, *Cooley LLP*
David Peinsipp, *Cooley LLP*