

June 10, 2020

**Via EDGAR Transmission**

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

Re: Axcella Health Inc.: Registration Statement on Form S-3 filed on June 5, 2020 (File No. 333-238983)

Ladies and Gentlemen:

Pursuant to Rule 461 under the Securities Act of 1933, as amended (the “**Act**”), Axcella Health Inc. (the “**Company**”) hereby requests that the effective date of the above-referenced registration statement (the “**Registration Statement**”) be accelerated to June 12, 2020, at 4:01 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 Laurie Burlingame of Goodwin Procter LLP at (617) 570-1879 or John Mei of Goodwin Procter LLP at (617) 570-1446.

Sincerely,

Axcella Health Inc.

/s/ Laurent Chardonnet

Laurent Chardonnet  
Chief Financial Officer

cc: William Hinshaw, *Axcella Health Inc.*  
Kingsley L. Taft, Esq., *Goodwin Procter LLP*  
Laurie A. Burlingame, Esq., *Goodwin Procter LLP*

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