

June 9, 2020

William Hinshaw  
Chief Executive Officer  
Axcella Health Inc.  
840 Memorial Drive  
Cambridge, MA 02139

Re: Axcella Health Inc.  
Registration

Statement on Form S-3

Filed June 5, 2020  
File No. 333-238983

Dear Mr. Hinshaw:

This is to advise you that we have not reviewed and will not review your registration statement.

Please refer to Rules 460 and 461 regarding requests for acceleration. 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.

Please contact Alan

Campbell at 202-551-4224 with any questions.

Sincerely,

Division of Corporation Finance

Office of Life Sciences

cc:

Laurie Burlingame