

August 15, 2018

John P. Longenecker  
Chief Executive Officer  
Aileron Therapeutics, Inc.  
281 Albany Street  
Cambridge, MA 02139

Re: Aileron Therapeutics, Inc.  
Registration Statement on Form S-3  
Filed August 7, 2018  
File No. 333-226650

Dear Mr. Longenecker:

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 Ada D. Sarmiento at 202-551-3798 with any questions.

Sincerely,

Division of

Office of

Corporation Finance

Healthcare & Insurance

cc: Stuart M. Falber, Esq.