



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

DIVISION OF  
CORPORATION FINANCE

July 9, 2020

Anthony G. Quinn, M.B Ch.B, Ph.D.  
Chief Executive Officer  
Aeglea BioTherapeutics, Inc.  
805 Las Cimas Parkway  
Suite 100  
Austin, TX 78746

**Re: Aeglea BioTherapeutics, Inc.**  
**Registration Statement on Form S-3**  
**Filed July 6, 2020**  
**File No. 333-239706**

Dear Dr. Quinn:

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 Jeffrey Gabor at 202-551-2544 with any questions.

Sincerely,

Division of Corporation Finance  
Office of Life Sciences

cc: Ryan Mittenness, Esq.