

July 10, 2023

Dr. Oliver Peoples
President and Chief Executive Officer
Yield10 Bioscience, Inc.
19 Presidential Way
Woburn, Massachusetts 01801

Inc.

Statement on Form S-1

Re: Yield10 Bioscience,

Registration

Filed June 30, 2023

File No. 333-273070

Dear Dr. Oliver Peoples:

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 Nicholas O'Leary at 202-551-4451 with any questions.

Sincerely,

Division of Corporation Finance

Office of Industrial Applications and

Services

cc:

Joel Papernik, Esq.