

April 30, 2024

Oliver Peoples
President & Chief Executive Officer
YIELD10 BIOSCIENCE, INC.
19 Presidential Way
Woburn, Massachusetts 01801

INC.

Statement on Form S-1
2024

Re: YIELD10 BIOSCIENCE,
Registration
Filed April 25,
File No. 333-278930

Dear 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:

Megan Gates, Esq.