



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4631

October 16, 2017

Via E-mail

Mr. Charles B. Haaser
Chief Accounting Officer
Yield10 Bioscience, Inc.
19 Presidential Way, Suite 201
Woburn, MA 01801

**Re: Yield10 Bioscience, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2016
Filed March 30, 2017
File No. 1-33133**

Dear Mr. Haaser:

We have completed our review of your filing. 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.

Sincerely,

/s/ W. John Cash

W. John Cash
Accounting Branch Chief
Office of Manufacturing and
Construction