



September 14, 2018

Dear Dr. Troyer,

We are pleased to accept your invitation to submit a manuscript to JoVE regarding our methods for culturing microalgae in photobioreactors. Enclosed in this submission is the manuscript entitled, "Cultivation of green microalgae in airlift photobioreactors and assay for neutral lipids."

Our photobioreactor approach offers more consistent results than standard flask cultivation but without the high cost of commercially-available photobioreactors. This system is flexible and can be adapted to the cultivation of a wide range of microalgae. We have also included our methods for quantifying growth and neutral lipid content of the algae produced in these photobioreactors. These two metrics are of great interest to the very large community of researchers studying algal biofuels. Although the neutral lipid assay has been published previously, we have received numerous inquiries from researchers requesting our step-by-step protocol for its execution. We have therefore included that with this submission.

To summarize, this protocol includes the following major components:

1. Setup of the photobioreactor system
2. Cultivation of algae in the photobioreactors
3. Harvesting of algae and determination of growth rates
4. Extraction of total lipids
5. Assay for neutral lipids

We believe this article and the associated video will be meaningful contributions to the scientific community. We hope it meets your expectations.

Sincerely,
Brendan Higgins
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