Abstract Example

**TITLE (ALL CAPS AND BOLD)**

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*Department Name*

Microalgae contain lipids and proteins among other valuable molecules that have the potential for uses in a variety of industrial applications including nutraceuticals, cosmetics, animal feed and aquaculture. Currently, extraction of these products independently is not economically viable for some applications. Our lab aims to develop an enzyme-based biorefinery process where proteins and lipids are efficiently extracted while reducing energy intensive processing and the use of organic solvents. In this study, the impact of cell disruption method on protein extraction and recovery via isoelectric precipitation was examined. Proteins were precipitated following cell disruption via enzymatic hydrolysis and were compared to cell disruption via sonication. Proteins were also precipitated after enzymatic disruption with the addition of enhanced protein extraction conditions (high temperature, high pH). Isoelectric precipitation of proteins extracted by enzymatic hydrolysis alone resulted in precipitation efficiencies 1.7-fold lower than proteins extracted by sonication. Addition of enhanced protein extraction conditions increased the amount of protein released by ~30% for both cell disruption methods. However, the precipitation efficiency of proteins released by enzymatic disruption was 2.7-fold less than that of sonication indicating that the incubation pH, temperature, and time were not solely responsible for the decreased precipitation efficiency of enzyme-disrupted cell lysates. Current efforts aim to identify the cause for lower precipitation efficiencies after enzymatic disruption.