

## **Assessing cadmium impacts on cellular growth and chlorophyll-a in *Phaeodactylum tricornutum* and *Thalassiosira oceanica***

Cadmium (Cd) is a unique element in that it mimics the vertical distribution of essential nutrients, but it is not considered one. Diatoms are the only known species to exhibit utilization of Cd for growth and cellular processes. For this study, diatoms *Phaeodactylum tricornutum* and *Thalassiosira oceanica* were cultured in 500 mL triplicates in Cd concentrations at 3, 10, and 50 nM. The experimentation was for ten days, and cell growth and chlorophyll-a measurements were done for seven of the ten days. Results illustrated that Cd did not have a significant impact on chlorophyll-a concentrations for either species. As commonly seen in literature, growth in *P. tricornutum* was significantly greater in the Cd treatments compared to the control, while there were no significant differences in growth rates for *T. oceanica*. Nutrient cycling and availability are the main drivers behind oceanic primary productivity. Understanding the dynamics of nutrients and how they aid in the ecological life span of phytoplankton are essential for gaining insight into how these organisms support oceanic ecosystems.

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