

Bio-Accumulation of Oil by *Aurelia aurita* Mucus

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This project was designed in order to determine the ability of *Aurelia aurita* mucus to bioaccumulate different types of oils. The project stemmed from another study that determined *Aurelia aurita* mucus has the ability to bioaccumulate nanoparticles resulting in a clean supernatant. *Aurelia aurita* mucus was harvested utilizing a procedure for collecting mesoglea. Mucus was combined with phenolic microballoons and different concentrations of sesame and motor oil. The phenolic microballoons were used as a positive control to confirm *A. aurita* mucus had the ability to bioaccumulate. Sesame oil was tested at 100%, 50%, and 25% concentration. Motor oil was tested at 50% and 25% concentration. The supernatant of each treatment was analyzed using a scanning spectrophotometer test. The data collected exhibited a trend of decreased absorbance at 25% and 50% concentrations of sesame and motor oil when compared to the original absorbance of the oils alone at above concentrations. Sesame oil at 100% concentration combined with mucus had an increase in absorbance in comparison to the absorbance the sesame oil alone. *Aurelia aurita* mucus has the ability to capture motor and sesame oils at 25% and 50% concentrations. The decrease in absorbance of the supernatants of the oils indicates that the mucus results in a clean supernatant. The knowledge gained from this project could provide a more natural solution to oil spills if *Aurelia aurita* mucus is synthetically developed.

Awards Won:

Third Award of \$1,000