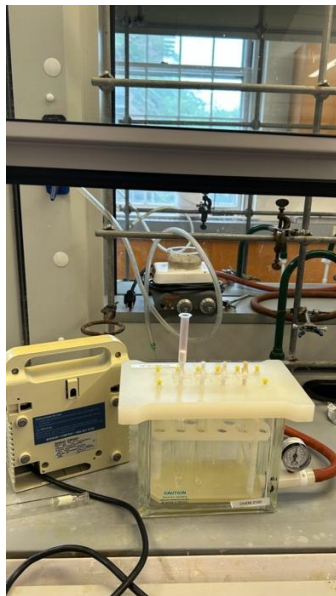


Tracking Antimicrobial Peptide Concentration Changes in Lobster Plasma During an Immune Challenge

Solencia Hamilton, 2028

Antibiotic-resistant bacteria have become a leading global health concern. New avenues of research are being pursued to combat this growing threat. One such avenue is antimicrobial peptides. Specifically, my research takes a novel approach by investigating the antimicrobial peptide *Hoa-D1* and its potential to combat antibiotic-resistant bacterium. *Hoa-D1* is believed to be released from lobster blood cells (hemocytes) and enter the hemolymph (plasma) during an immune response. To pursue this research, six immune challenge experiments were performed. For each experiment, pre-injection hemolymph draws were taken from two American lobsters. Then *E. coli* lipopolysaccharides (sugars coating the outer layer of *E. coli*) was injected into to one lobster to stimulate an immune response while lobster saline (no direct impact on immune system) was injected in the other lobster. After 24 hours, a post-injection hemolymph draw was collected from both lobsters. The cell counts for each hemolymph sample was calculated using an automated cell counter. Protein Precipitation and Solid Phase Extraction were used to purify plasma samples. Finally, *Hoa-D1* concentration in the samples were calculated using liquid chromatography–mass spectrometry. Results of this experiment are pending.



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