Sting Me Not! Inhibiting Copula sivickisi (Box Jellyfish) Stinging Cell Discharge

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Introduction: Throughout the tropical Pacific, box jellyfish pose a medically significant sting danger to beach-goers, tourists, & swimmers. Cnidae or stinging cells, including the nematocysts, discharge upon contact with prey or victim. Light microscopy reveals the presence of thousands of nematocyst along the length of the tentacles of Copula sivickisi. The aim of this study is to investigate the potential inhibitory actions of various chemical agents including vinegar, baking soda paste, distilled water, and seawater. Hypothesis/Objective: To determine which chemical substances and concentrations effect the Copula sivickisi nematocyst firing. I hypothesize that solutions higher in acidity will reduce the firing. Methods: Our research team collected Copula sivickisi from Smiling Cove Marina docks in Saipan. We used flashlights to attract the jellyfish at night and catch them with cups. The freshly caught box jellyfish will be maintained in seawater aquaria with aeration until the experimental protocols are performed. A dry milk agar mixture is made and stored in petri dishes. Afterwards, live jellyfish were excised and immediately observed using compound light microscope. Agents to be tested include: seawater (control), vinegar and baking soda paste (mixed with seawater) and distilled water. Results: All solutions: distilled water, baking soda paste, and vinegar triggered the nematocyst firing. Seawater has potential inhibitory actions, showing no present firing.

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