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Novel Pharmaceutical Application of Jellyfish Venom

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This research project investigates the biological components of C. xamachanavenom, commonly understood as the painful sting of a jellyfish, which offer an understudied and innovative avenue for novel drug discovery. Compared to synthetic chemical structures, the complexity of natural compounds released from stinging cells, calledcnidocytes, is of certain interest from a human health perspective. We conducted venom collection via manual tentacle extraction, autolysis in seawater, and a prolonged incubation in a -80° freezer. We then purified and separated the venom in size exclusion columns that allowed us to identify fractions of interest to be tested for bioactivity. Following a search for bioactive protein components in the venom of C. xamachana, a search for small molecules will be conducted. By the end of the process, we hope to isolate pure fractions containing compounds of interest that can be analyzed via nuclear magnetic resonance (at an outside laboratory) for structural elucidation. Hopefully the final result is a distinct and novel structure that can be analyzed and utilized in pharmaceutics.