

COMPARITIVE STUDIES ON VENOM EXTRACTS FROM THREE JELLYFISH: THE IRUKANDJI (CARUKIA BARNESI), THE BOX JELLYFISH (CHIRONEX FLECKERI SOUTHCOTT) AND THE BLUBBER (CATOSTYLUS MOSAICUS).

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The objectives of this study were to isolate crude venom from the Box jellyfish (*Chironex Fleckeri*), the Irukandji jellyfish (*Carukia barnesi*) and the Blubber jellyfish (*Catostylus mosaicus*) and to undertake comparative studies of their venom using SDS PAGE. Crude venom from Box jellyfish isolated nematocysts, and soluble fractions from whole Irukandji bells and *Catostylus* oral lobes, were obtained in quantity by a simple method involving 10-15 minutes of chilled glass mortar and pestle grinding in phosphate buffered saline. The use of more sophisticated techniques including homogenisation, freeze thawing and sonication were not advantageous. Preliminary study of the jellyfish crude venoms and soluble fractions by SDS-PAGE was undertaken and extraction procedures were compared. Box jellyfish crude venom and Box jellyfish milked venom SDS PAGE protein files were compared. Irukandji and *Catostylus* soluble fractions SDS-PAGE protein profiles have been established for the first time. Box jellyfish antivenom binds to the crude venom of Box jellyfish, Irukandji jellyfish and *Catostylus* jellyfish by Western Blot. Lethal activity in the Irukandji jellyfish soluble fraction was demonstrated in mice by intravenous LD. Partial breakdown of the Box jellyfish crude venom protein of MW 40,000 was observed with a corresponding increase in protein at MW 17,000 after freeze thawing. The Box Jellyfish venom component of approximate MW 40,000 (as estimated by SDS PAGE) may be present as a dimer of subunits of approximate MW 17,000. Immunisation of rabbits with the Irukandji venom lethal fraction is the next step towards antivenom production.