

Histological characterization of venom secretory cells in the stinger of 3 stingrays (Dasyatidae) species: *Dasyatis bennetti*, *Himantura walga*, *Himantura gerrardi*, in northern water of Persian Gulf and Oman Sea

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Abstract:

Rays are common elasmobranches in the northern waters of Persian Gulf and Oman Sea that may have one or more mineralized serrated stingers on the whip-like tail. The stingers are covered by epidermal cells among which some can produce venom. When these animals are dorsally touched, the stinger may be introduced into the aggressor by a whip reflex mechanism, causing severe mechanical injuries and inoculating the venom. A comparative morphological characterization of the stinger epidermal tissue of different ray species in the northern part of Persian Gulf and Oman Sea was carried out in this study. EDTA was used for decalcification of stings and conventional histological processes were subsequently employed. The results indicated that structure of dermis and epidermis layers of stings in all species are similar to those of corresponding layers in other parts of fish's body. The results of the present study have also shown that all three examined species, had venom secretory cells. Distribution of venom secretory cells varies in each species; in *Dasyatis bennetti* and *Himantura walga* species, these cells presented in all covered epithelium of stings and in *Himantura gerrardi*, were in the ventral, ventro-lateral and dorso-lateral of the spine. These differences among the stingers of various species may explain the envenomation severity in these species.

Keywords: Stingray, Stinger, Histology, Venom secretory cells, Persian Gulf and Oman Sea.

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