

Histological approach on lateral line organs of jack mackerel (*Trachurus japonicus*) (マアジの側線器官に関する組織学的検討)

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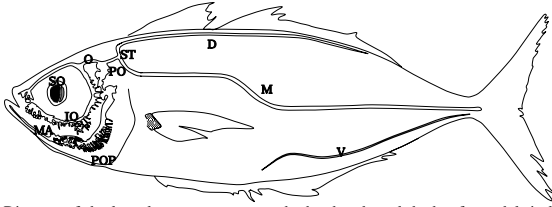
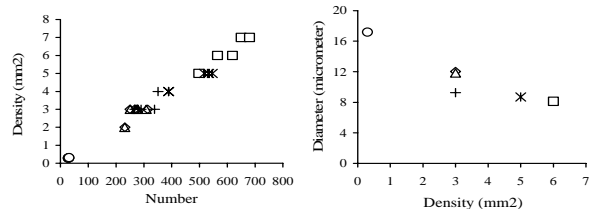
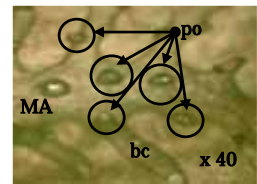
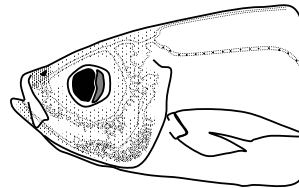


Diagram of the lateral organ systems on the head and trunk body of an adult jack mackerel. D, dorsal trunk lateral line canal; IO, infraorbital canal; MA, mandibular canal; M, main lateral line canal; O, otic canal; PO, postotic canal; POP, preoperculum canal; SO, supraorbital canal; ST, supratemporal canal; V, ventral lateral line canal.

[Objective] For the purpose to understand the response mechanism of fish toward the gear stimuli during capture process, the structure and function of lateral line organs of jack mackerel (*Trachurus japonicus*) was studied through the histological observation.

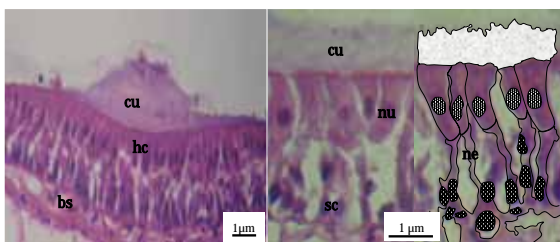
[Methods] The histological observation was conducted with the binocular microscope, by hematoxylen and methylene blue dye for identifying the structure and distribution of lateral line organs in the head and trunk, and then to identify the histological details of pores and hair cells by preparing the sampled tissue for the photo-microscopic observation.

[Results] Seven canal systems were identified in the head part; such as supra temporal, postotic, otic, supraorbital, infraorbital, preoperculum and mandibular canals with the width ranging 1-1.5 mm. The supratemporal canal extends along the dorsal surface of the skull and turns ventrally to be connected to the infraorbital canal. The preoperculum canal runs along operculum and connects with mandibular canal. Its lower portion is almost



Distribution of the pores on the body part. mandibular canal (MA); Branch canal (bc); Pores (po) and Density, number, and average of diameter of the pores on respectively body part.

parallel to the infraorbital canal. The infraorbital and preoperculum canal have branch densely. Higher density of pore distribution was located on the nasal and mandibular area, which is 6 and 5 pores/mm² respectively. In the other areas of the head part, the density of pores was 3 pores/mm². Concerning the trunk part, 29-30 pores of 17.19 μ m diameters in average were identified along the main lateral line, while no pores were observed along the dorsal and ventral trunk line. The details



Structure of the clumping neuromast canal and hair cell; Cupula (cu); Hair cell (hc); Basal membrane (bs); nucleus (nu); supporting cell (sc); Nerve ending efferent (ne).

at the otic, supraorbital, infraorbital and preoperculum canal observed with the photomicroscope and compared with the previous papers, for identifying the canal and hair cell system.