

Histological approach on the lateral line organ of jack mackerel (*trachurus japonicus*) for mechanical sensing in swimming behavior

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Abstrak

The function of lateral line organ system of jack mackerel (*Trachurus japonicus*) was studied through histological observations, for identifying the structure and distribution of lateral line organs both for the head part and body trunk, with the identification of the histological details of pores and hair cells. Histological observations were conducted with a binocular microscope, with three different approaches as haematoxylin, methylene blue and di-4-ASP dye for identifying the structure and distribution of lateral line organs, and then to identify the histological details of pores and hair cells by preparing the sampled tissue for photo-microscopic observations. The results showed that seven canal systems were identified in the head part; such as supra temporal, postoptic, optic, supra orbital, infra orbital, operculum and mandibular canals, with the width ranging 0.9-1.5 mm. Higher density of pore distribution was examined on the nasal and dorsal areas of the head part, which is 7-8 and 5 pores/mm² respectively. In the other areas of the head part, the density of pores was ranged as 1-2 pores/mm². Concerning the body trunk, 29 pores of 12-13 pm diameters were identified along the main lateral line. The functions of lateral line organ of jack mackerel are discussed in relation to the swimming behaviour and performance.