

Recurrent facial taste neurons of sea catfish *Plotosus japonicus* : morphology and organization in the ganglion

ABSTRACT

This study investigated the morphology of the recurrent facial taste neurons and their organization in the recurrent ganglion of the sea catfish *Plotosus japonicus*. The recurrent ganglion is independent of the anterior ganglion, which consists of trigeminal, facial and anterior lateral line neurons that send peripheral fibres to the head region. The recurrent taste neurons are round or oval and bipolar, with thick peripheral and thin central fibres, and completely wrapped by membranous layers of satellite cells. Two peripheral nerve branches coursing to the trunk or pectoral fin originate from the recurrent ganglion. The results presented here show that the trunk and pectoral-fin neurons are independently distributed to form various sizes of groups, and the groups are intermingled throughout the ganglion. No distinct topographical relationship of the two nerve branches occurs in the ganglion. Centrally, the trunk and pectoral-fin branches project somatotopically in the anterolateral and intermediate medial regions of the trunk tail lobule of the facial lobe, respectively.

Keyword: Bipolar neuron; Central projection; Facial centre; Somatotopy; Taste centre; Taste neuron