Primary taste neurons of Japanese sea catfish, *Plotosus japonicus*: morphology and organization in the ganglia.

Nurdiyana Ahmad Denil and Sadao Kiyohara
Graduate School of Science and Engineering, Kagoshima University, Japan

The present study is initiated to reveal morphology of primary taste neurons and their organization in the peripheral ganglia of the Japanese sea catfish, *Plotosus japonicus*. Labeling techniques of taste neurons with different colors of fluorescent tracers were used in the alive or fixed specimens. Taste neurons are located in both the trigeminofacial complex and recurrent ganglia. The neurons of the complex ganglion send fibers to taste buds located in the anterior mouth cavity and head while those of recurrent ganglion send fibers to buds distributed in the trunk and fins. The ganglion cells were bipolar with round cell bodies with diameter ranging from 17.4±2.4μm (short diameter) to 25.9±1.9μm (long diameter). The central fibers are thinner in diameter (1-2μm) than the peripheral fibers (4-5μm). Application of tracers to the whole recurrent ramus labeled cell bodies only in the recurrent ganglion, showing somatotopic organization between the two ganglia. However, simultaneous labeling of the two rami, pectoral fin and trunk branches with different dyes showed no distinct somatotopic organization in the recurrent ganglion. We also confirmed distinct somatotopic projections of the pectoral and trunk ramus to the trunk-tail lobule in the facial lobe of the medulla.