

Distribution of Putative Dopaminergic Neurons and Identification of D2 Receptors in the Brain of Fish

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Abstract : Dopamine is an essential neurotransmitter in the central nervous system of all vertebrates and plays an important role in many processes such as motor function, learning and behavior, and sensory activity. One of the important functions of dopamine is release of pituitary hormones. It is synthesized from the amino acid tyrosine. Two types of dopamine receptors, D1-like and D2-like, have been reported in fish. The dopamine containing neurons are located in the olfactory bulbs, the ventral regions of the pre-optic area and tuberal hypothalamus. Distribution of the dopaminergic system has not been studied in the murrel, *Channa punctatus*. The present study deals with identification of D2 receptors in the brain of murrel. A phylogenetic tree has been constructed using partial sequence of D2 receptor. Distribution of putative dopaminergic neurons in the brain has been investigated. Also, formalin induced hypertrophy of neurosecretory cells in murrel has been studied.

Keywords : dopamine, fish, pre-optic area, murrel

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