Histo-Morphological variation of the Pituitary-Interrenal tissue of the Mullet fish (Mugil Cephalus) reared in different habitats

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Abstract

The present study carried out on adult Mugil cephalus fish collected from freshwater and marine water. The pituitary gland and head kidney obtained and processed for examination by using light microscope besides other samples were prepared and processed for transmission electron microscope. This investigation showed that pituitary gland of adult Mugil Cephalus fish consisted of two parts; Adenohypophysis and Neurohypophysis. The adenohypophysis consisted of three parts named as; Rostral pars distalis, Proximal pars distalis and Pars intermedia. By certain histochemical stains, seven cell types were detected in adenohypophysis as, Lactotrophs and adrenocorticotrophs in rostral pars distalis, while in proximal pars distalis, gonadotrophs, somatotrophs and thyrotrophs were detected. While melanotrophs and somatolactin cells were detected in pars intermedia. By light microscope, results showed increased in the Lactotrophs and adrenocorticotrophs in the number in fresh water Mugil Cephalus than in marine one. The present results showed absence of adrenal gland in Mugil cephalus resemble mammals but inter renal and chromaffin cells that located in the wall of posterior cardinal vein in head kidney. In freshwater fish, more layers of inter renal cells were observed than that in marine one.

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