

## عنوان مقاله:

Evaluation of acetylcholinesterase transcript level as a biomarker of methylmercury in orange spotted grouper (Epinephelus coioides) brain

## محل انتشار:

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## خلاصه مقاله:

The bioavailability of methylmercury (MeHg) in the brains of orange spotted groupers, captured from four creeks of Mahshahr embayment was measured. Then the effects of this pollutant on the regulation of gene expression, acetylcholinesterase transcript levels was chosen in order to monitor the amounts of methylmercury concentrations in the creeks, and the fluctuations of mRNA expressions in the brain and their effect on fish health. Fishes were collected from Zangi, Ghanam, Marymous and Petrochemical Creeks, and their brains were removed by dissection. In parallel with these experiments some fishes were exposed to methylmercury chloride in the Fisheries center and the amount of their gene expression was assessed via Real-Time PCR method. The lethal concentration of methylmercury causing the mortality of half of the fish population after 96 hr (LC<sub>50-96</sub>) was assessed and gene expression of sub-lethal concentration (more and less than 10% of LC<sub>50-96</sub>) were analyzed. Gene expression studies revealed that the most polluted creek was the Petrochemical Creek, and the least polluted one was Marymous Creek. This regulation was assessed by the effect of MeHg on the gene expression, meaning the more gene expression, the less polluted and vice versa. From this study we concluded that acetylcholinesterase gene expression can serve as a biomarker of the effect of methylmercury, which can provide a good estimation of the amount of methylmercuric availability in the brain of Epinephelus coioides and its effect on the brain neurotransmission pathway.

## کلمات کلیدی:

Acetylcholinesterase (AChE), Methylmercury (MeHg), Epinephelus coioides, Orange spotted grouper, Transcript level, Brain

## لینک ثابت مقاله در پایگاه سیویلیکا:

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