Alkaline phosphatase activity and oxygen consumption efficiency in the muglid fish *Planiliza abu* juveniles as biomarkers to a long-term exposure to gas oil

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Abstract

The impact of long-term exposure of petroleum hydrocarbons on metabolic rate in *Planiliza abu* juveniles was studied. Alkaline phosphatase activity and oxygen consumption efficiency as biomarkers were tested after exposing to different levels of gas oil in warm and cold conditions. The results showed an elevation in the activity of the ALP enzyme. The activity of the ALP enzyme was higher in warm conditions than in cold conditions. An increase in oxygen consumption was observed after exposure, and it was higher in warm conditions than in cold conditions. The level of hydrocarbons in the blood plasma of fishes was measured using an Oil Content Analyzer, which showed increasing levels in warm conditions compared to cold water. The study concluded that long-term exposure to petroleum hydrocarbons affects metabolic processes as indicated by the excess in enzymatic activity and oxygen consumption rates. The study concluded that increasing in metabolic activity in order to get rid of oil pollutants and avoid their effects on internal systems. The study concluded the exposure to gas oil spill affects the basic biological functions of the fish. On the other hand, ALP enzyme and oxygen consumption rates are suitable as biomarkers for long-term exposure to petroleum hydrocarbons on freshwater.

Keywords: Biomarkers, Hydrocarbons, Iraq, Oil spill, Respiration, *Planiliza abu*.

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