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EFFECTS OF PYRENE EXPOSURE ON XENOBIOTIC METABOLIZING ENZYMES IN NILE TILAPIA, *Oreochromis niloticus*

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Pyrene, which is an abundant polycyclic aromatic hydrocarbon (PAH) in aquatic environments, has been identified as a prime pollutant due to its potential carcinogenicity. Pyrene can be converted to reactive intermediates by the Cytochrome P1A1 enzymes within the exposed organisms. In the present study, effects of pyrene exposure on activities of a Cytochrome P1A1 mediated enzyme, ethoxyresorufin O-deethylase (EROD), and an enzyme involved in deactivation of reactive intermediates, Glutathione S-transferase (GST) in Nile tilapia were investigated. Sub-adults of Nile tilapia were injected intraperitoneally with different doses of pyrene (0.5, 5 and 50 mg kg^{-1} body weight) and the enzyme activities in liver and gill tissues were evaluated on d 3 and d 6 following the treatment in comparison to the comparable control fish. Results indicate that pyrene treatment had no influence on the EROD or GST activities of the gills. However hepatic EROD activities of fish treated with pyrene at 5 or 50 mg kg^{-1} were induced by 3-5 folds in comparison to that of the controls. In contrast, hepatic GST activities of the pyrene treated fish were depressed significantly depending on the administered dose level. Induction of EROD and depression of GST could pose health risks to the fish exposed to pyrene. The results suggest that hepatic EROD and GST activities are potential biomarkers of PAH exposure in this fish.