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Pollutant Responses In Marine Organisms

Comparison of xenobiotic metabolizing enzymes of *Tilapia* with those of other fish species and interspecies relationships between gene families

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Abstract

Baseline data for hepatic xenobiotic metabolizing biomarker enzyme activities were obtained for artificially reared tilapia *Oreochromis niloticus*, and were compared with those of the plaice (*Pleuronectes platessa*) and rainbow trout (*Onchorynchus mykiss*). Basal activities exhibited species variations with notably higher CYP1A and phenol UGT activities and lower GST activity in plaice than the freshwater species. Interspecies relationships between gene families determined by immunoblotting and substrate-activity profiles demonstrated the presence of homologous CYP1A and CYP3A enzymes in all three species, alpha class GSTs in plaice and trout, mu and pi class GSTs in trout and theta class GSTs in plaice and tilapia. CYP1A of tilapia was induced by 3-MC or PBO treatment, whilst CYP3A was induced by PCN treatment.

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