

Oral Presentations

Session I-A

INDUCTION OF CYTOCHROME P4501A1 GENE ON MARBLED SOLE (*LIMANDA YOKAHAMAE*): COMPARISON BETWEEN THE MASAN BAY AND THE HAEGEUMGANG, GEOJE IN SOUTH SEA OF KOREA

¹J.H. Jung*, ¹R.F. Addison, ²D.J. Kim, ¹W.J. Shim, ¹S.H. Hong, ¹D.H. Li, ¹U.H. Yim, ¹J.R. Oh and ³C.H. Han.

¹ South Sea Institute, KORDI, Geoje, 656-830, Korea

²National Fisheries Research and Development Institute, Gijang-gun 612-902, Korea

³Division of life Science, Dong-eui Univ., Busan, 614-714, Korea

To date, considerable number of studies has studied that the induction of hepatic CYP1A1, the major oxidative enzyme, can be stimulated by polycyclic aromatic hydrocarbons (PAHs) and polyhalogenated aromatic hydrocarbons in fish (Stegeman and Hahn, 1994; Husoy et al., 1996; Wong et al., 2000). Cytochrome P450 (CYP450) enzymes are responsible for the majority of oxidation reactions of drugs, and other xenobiotics and differences in their expression may directly produce inter individual difference in susceptibility to compounds whose toxicity is modulated by these enzyme. There have been attempt to use the P450 level and ethoxyresorufin-*O*-deethylase (EROD) activity in fish as a biochemical markers to determine the extent of exposure to enzyme inducing chemicals *in vitro*. However, there is little study on CYP 1A1 induction of the species of inhabitant in Korean coastal water. In this study, we have encoded a partial CYP1A1 gene and β -actin for control gene of the marbled sole (*Limanda yokahamae*) in order the use of a tool to monitor environmental chemical in marine ecosystem. The deduced amino acid of

Limanda yokahamae CYP1A1 showed a high homology to other fish. CYP1A1 mRNA transcript of approximately 3.5 kilobases from hepatic tissue has been extracted for northern blot analysis. We sampled juvenile *Limanda yokahamae* at two coastal areas (Masan Bay and Haegeumgang, Geoje) to study on the seasonal variation of CYP 1A1. Fish from Masan Bay have higher CYP1A1 mRNA induction than those from the Haegeumgang in spring, but in summer it was opposite. The results from this study suggest that *Limanda yokahamae* in Masan Bay may be affected by other environmental factors.