PC-2.

미호천 수계의 어류 건강성 평가를 위한 생화학적 지표 연구

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The biological responses of wild fish were assessed using three biomarkers, Vitellogenin (VTG), 7-ethoxyresorufin-O-deethylase (EROD) induction and DNA single strand breaks. Chub (*Zacco platypus*) of post-spawning and spawning period were caught from the polluted and reference sites of the Miho Stream in 2003. The induction of vitellogenin was determind by the ELISA(enzyme-linked immunosorbent assay) in the chub plasma. The induction of cytochrome P4501A was quantified by the EROD activity in the liver and DNA damage was evaluated in chub blood using Comet assay. The hepatic EROD activities in fish from the polluted site were 3-7 times higher than those from the reference site and DNA damage was found to be a slight increase in the polluted site compared to the reference site, but the induction of vitellogenin in male chub was not observed at two sites.

The results showed that EROD activity and DNA damage responses were clear relatively to the VTG induction between the polluted and reference sites. These results suggest that the Miho Stream is considered to be contaminated by some chemicals affecting EROD activity and DNA damage in fish, and thus the more research regarding the causes of EROD induction and DNA damage in polluted site is required.

Key Words : Miho Stream, fish, *Zacco platypus,* vitellogenin, EROD activity, DNA damage, biomarkers