

**ELEVATION OF 7-ETHOXYRESORUFIN O-DEETHYLASE (EROD)
ACTIVITY IN IMMATURE GROUPER *ANYPERODON LEUCOGRAMMICUS*
AFTER EXPOSURE TO BENZO[A]PYRENE : CYTOCHROME P4501A1
LEVELS AS A BIOMARKER OF EXPOSURE TO POLYCYCLIC AROMATIC
HYDROCARBONS**

By Laurence D. Peters

Plymouth Marine Laboratory, Citadel Hill, Plymouth, PL1 2PB, England

ABSTRACT

Extensive studies have demonstrated that exposure to specific organic pollutants, initiates an elevation of the hepatic protein cytochrome P4501A1 (CYP1A1). Levels of CYP1A1 may be determined by 7-ethoxyresorufin O-deethylase (EROD) activity expressed by the CYP1A1. Juvenile grouper *Anyperodon leucogrammicus* were injected intra peritoneally (20 mg/kg wet weight) with benzo[a]pyrene (B[a]P) or β -naphthoflavone (model CYP1A1 inducer) dissolved in corn oil, and held for 24 hours in clean sea water. Hepatic EROD activity was determined in the S9 fraction. Enzyme activity in control fish (corn oil alone) was below the detection limits of the experimental assay, however B[a]P and β -naphthoflavone elevated EROD activity (1043 ± 262 and 450 ± 367 pmol/min/g liver weight respectively). These results suggest that *A. leucogrammicus* may be a suitable sentinel species for assessing the impact of organic pollutants in the field.