

EFFECT OF CIS-ELEMENT ON THE REGULATION OF TROUT LIVER CYTOCHROME
P450IA1 GENE EXPRESSION

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In order to gain insight into the mechanism of the regulation of cytochrome P450IA1 by arylhydrocarbon, the 5'-flanking region of a trout CYP450IA1 5'flanking DNA was cloned into pCAT-basic vector and it was transfected into Hepa-I cells. 3MC treatment to hepa I cells transfected with fish CYP450IA1-CAT construct results in mRNA increased by 2.81 fold when it was compared with that of control. This increase of mRNA was decreased by concomitantly treated flavonoids such as morin. The levels of CAT mRNA that was treated with morin was 29.2-58.0% of 3MC stimulated CAT mRNA. Further investigation to find out if there are DRE, XRE or negative regulatory cis element in CYP450IA1 gene was undertaken.

Results of the deletion study of 5'flanking DNA of trout P450IA indicate the existence of the negative(-1600 ~ -1300). CAT mRNA was about two-fold higher in deleted trout CYP450IA1-CAT construct transfected cells compared to the wild type trout CYP450IA1-CAT construct transfected cells. And The stimulatory effect of 3MC was no longer observed in cells containing deleted CAT construct. [Supported by grants from the Korean Ministry of Education]