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Isolation and Characterization of the cDNA Encoding the Medaka (*Oryzias latipes*) Testis Form of Cytochrom P45011β

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Cytochrome P45011β (11β-hydroxylase) is responsible for the conversion of testosterone to 11β-hydroxytestosterone which play a role sperm formation in fishes. A cDNA library was constructed from poly(A)-enriched mRNA isolated from medaka testis. The amplified library was screened using a PCR products probe. One of the four isolated clones contained 43 bp of 5'-untranslated region, a 1617 bp open reading frame, and a 110 bp 3'-untranslated region. Northern blot analysis indicated that 2.4 kb and 1.7 kb translated but 2.4 kb cDNA has 3 nonsense codons in open reading frame. The deduced amino acid sequence of P45011β medaka testis was 68% identical to P45011β of Japanese eel testis and 40 ~ 53% identical to P45011β of mammalian adrenal gland. Nonsteroidogenic *E.coli*, transformed with 11β-hydroxylase cDNA, converted testosterone to 11β-hydroxytestosterone. Northern blot analysis indicated that translated levels of 11β-hydroxylase are almost constant during daily reproduction cycle. [HRC-0101]

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Evidence for surface mediated action of progesterone in inducing oocyte maturation in amphibians, *Rana dybowskii*

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BSA bound progesterone (P-BSA) was found to induce germinal vesicle breakdown (GVBD) of denuded oocytes, but not intact follicular oocytes in a dose dependent manner. In P-BSA treated denuded oocytes, there was an early rise of IP_3 and DAG followed by the increase in protein kinase C (PKC) activity which reached the peak at 30 min whereas, BSA bound estradiol (E-BSA) treated or control oocytes maintained the basal level throughout the exposure period. Treatment of denuded oocytes with an adenylate cyclase activator, forskolin, suppressed P-BSA induced oocyte GVBD indicating that the activation of protein kinase A (PKA) pathway acts negatively in oocyte maturation. The present study suggests that progesterone acts on the oocyte surface and it activates PKC pathway in oocyte maturation (HRC-96-0101)