

D107 **A comparative study between *Xenopus* and *Rana dybowskii* oocyte maturation as an effect of heat shock and chemical stress**

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Most of the living cells respond the same way to heat shock. Experiments were carried out to examine the effect of heat shock (35°C) and chemical stress in progesterone induced oocyte maturation processes of *Rana* and *Xenopus*. Preincubation of oocytes at 35°C for 90 min inhibited progesterone induced oocyte maturation (germinal vesicle breakdown, GVBD) in *Rana dybowskii* but not in *Xenopus*. Treatments of oocytes with cadmium, arsenite and hydrogen peroxide also inhibited oocyte maturation in *R. dybowskii* in a dose dependent manner (1-100 µM). When the oocytes were given heat shock at 35°C for 90 min, there was a significant decrease (1/6th of control) in protein synthesis following progesterone stimulation (12h) in *Rana*, whereas less decrease (1/2 of control) appeared in *Xenopus*. Induction of a 70 kDa heat shock protein was observed in both *Xenopus* and *Rana* oocytes exposed to 35°C heat shock for 90 min. This study suggests that oocytes of *Xenopus* and *Rana* respond in different way to the same environmental stress.

D108 **Cloning and expression of a mammalian gonadotropin releasing hormone (mGnRH) cDNA in Bullfrog**

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Gonadotropin releasing hormone (GnRH) plays an important role in the reproduction of vertebrates. cDNA encoding the mammalian form of gonadotropin releasing hormone (mGnRH) precursor in *Rana* forebrain was cloned and sequenced by reverse transcription and rapid amplification of cDNA ends (RACE). The full length mGnRH precursor cDNA consists of 653 bp., including an open reading frame of 270 bp. The 90 amino acid long *Rana catesbeiana* GnRH precursor shows an identity of 60% with *Xenopus laevis* and 36% with human. A single mRNA transcript of approximately 600 bases for the mGnRH precursor in the forebrain was detected by Northern Blot analysis. Expression pattern of mGnRH in brain area was examined by RT-PCR quantitative. The gene expression was high in olfactory bulb and telencephalon whereas very low in epithalamus, hypothalamus and hind brain. Genomic Southern blot analysis shows a single copy of genomic DNA. This is the first report for the presence of a mammalian form of GnRH cDNA in *Rana*.