Poster #20

Nongenomic Androgen Signaling in the Ovary

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Xenopus oocyte maturation and ovulation rely upon precise regulation of oocyte meiosis. Oocytes are arrested in prophase I until just prior to ovulation, when meiosis, or maturation, is triggered to resume. For many decades it has been shown that steroids induce oocyte maturation in a transcription-independent (nongenomic) fashion. Previous work in *Xenopus laevis* demonstrated that, although several steroids promote oocyte maturation *in vitro*, androgens were the most abundant and potent steroids detected in the serum and ovaries of ovulating frogs. Thus androgens were likely the primary physiologic regulators of *Xenopus* oocyte maturation, mediating their actions at least in part via classical androgen receptors expressed in oocytes. These current studies were designed to further characterize the physiologic steroids mediating *Xenopus* oocyte maturation and ovulation *in vivo*. First, VN/85 a potent inhibitor of CYP17 activity, reduced β-human chorionic growth (hCG) hormone-triggered oocyte maturation *in vivo* by blocking androgen production. Additionally, VN/85 delayed hCG stimulated ovulation in female frogs. Finally isolated oocytes were shown to sequester steroid hormones for hours following removal. These studies confirm the physiologic importance of androgen production for normal oocyte maturation and ovulation in female *Xenpous laevis*.

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