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JOURNAL ARTICLE

Characteristics of prolactin-modulated LH induction of LH/hCG receptors. Transient inhibition of receptor induction following prolactin exposure

M. O. Hussein and W. B. Zipf
Department of Pediatrics, Ohio State University, Children's Hospital, Columbus 43205.

The temporal relationship between exposure to prolactin (PRL) and luteinizing hormone (LH) induction of LH receptors was investigated in hypophysectomized adult male rats. Testicular homogenate membrane preparations were incubated with [125I]hCG for analysis of LH/hCG binding. Seven days after hypophysectomy, the rats were injected with 100 micrograms/day of PRL for another 7 days and then given a single 10-micrograms dose of LH at 2, 4, 6, 12, 24, or 36 hours after the last PRL injection. The priming effect of PRL on LH induction of receptors was not observed if LH was administered 2 to 12 hours from the last PRL injection. However, after this inhibitory period, injections of LH to PRL-primed rats resulted in induction of LH receptors and the effect persisted for 36 hours. This study supports previous reports demonstrating a unique dependence upon PRL for LH up-regulation of the LH receptor and characterizes the brief refractory period following exposure to PRL.

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