

# Norepinephrine release in the immature ovary is regulated by autoreceptors and neuropeptide-y

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Experiments were undertaken to study the role that neuropeptide-Y (NPY) and adrenergic autoreceptors may play in the regulation of norepinephrine (NE) release from the rat ovary. Ovaries from 28- to 32-day-old rats were preincubated with [3H]NE, and the release of the recently taken up catecholamine in response to electric field stimulation was assessed. The release was strictly dependent on the presence of extracellular calcium and decreased when the frequency of stimulation was increased. This drop in [3H]NE release was significantly reversed by exposure of the ovaries during stimulation to yohimbine, a selective  $\alpha_2$ -adrenoreceptor blocker. The existence of prejunctional  $\alpha_2$ -adrenergic autoreceptors in ovarian nerves was further suggested by the ability of exogenous NE to mimic the inhibitory effect of high frequency stimulation. NPY inhibited by 40% the release of [3H]NE induced by electrical stimulation. The specificity of this effect and its prejunctional nature were demonstrated by