

parallel with those of standard peptide, indicating that the ovarian immunoreactive LH-like material is similar to authentic pituitary LH molecule. In conclusion, these findings demonstrate that genes for LH subunit are expressed in the rat ovary, and suggest that LH can play a central role in regulation of female reproduction with both endocrine (i.e. pituitary LH) and auto-/paracrine (i.e. ovarian LH) manner. Studies are currently carried out to analyze the exact structure of the transcript and the regulation mechanism of the gene expression.

P-24 Detection of Pituitary Adenylate Cyclase-Activating Polypeptide (PACAP) and its receptor gene in the rat uterus and oviduct

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Pituitary adenylate cyclase-activating polypeptide (PACAP) is a hypothalamic neuropeptide, and with vasoactive intestinal peptide and growth hormone releasing hormone, belongs to the secretin / glucagon hormone family. PACAP exerts a potent stimulatory action on cyclic AMP production in anterior pituitary cells and promotes the release of several hormones from pituitary. Recent evidence clearly shown that PACAP transcript with novel exon 1 and/or transcripts with higher molecular weight than that of hypothalamic form are detected in the rat testis and ovary, indicating the existence of local production and function of PACAP. In fact, PACAP might serve as a autocrine and/or paracrine regulator for gonadal steroidogenesis. The present study was performed to analyze the expression of PACAP and its receptors in the rat uterus, a candidate for novel extrahypothalamic source and target.

In the adult rat uterus and oviduct, expression of the PACAP gene was demonstrated by amplification of uterine and oviductal RNA by reverse transcription-polymerase chain reaction (RT-PCR). The 3' rapid amplification of cDNA end (RACE) technique was applied to analyze the PACAP coding region and 3' untranslated region; PCR products with identical size were detected from uterus/oviduct samples and from all known PACAP sources. In addition, RT-PCR using specific primers for the PACAP type I receptor yielded products of expected sizes with RNAs from rat uterus and oviduct. Our findings demonstrate that both PACAP and PACAP receptor genes are expressed in the rat uterus and oviduct, where they could play an autocrine and/or paracrine roles on uterine/oviductal function such as secretion and muscle contraction for the transport of fertilized eggs.