217 Detection of Progesterone Receptor Messenger Ribonucleic Acid in Rat Brain using Reverse Transcription-Polymerase Chain Reaction. K.Hagihara, S.Hirata, T.Osada, M.Hirai, J.Kato. Dept. of Obst. and Gynec., Yamanashi Med. School, Yamanashi.

In order to study the existence of progesterone receptor messenger ribonucleic acid(PRmRNA) in the rat brain, reverse transcription-polymerase chain reaction(RT-PCR) was carried out.

Hypothalamus and preoptic area, amygdala, cerebral cortex, cerebellum and anterior pituitary gland were dissected from adult female Wistar strain rats. Total RNA extracted from each tissues was reverse transcribed followed by PCR using the primer set. The nucleotide sequence of the primers was drived from the part(320bp) of progesterone binding domain of the human PRcDNA. RT-PCR products were obtained from each brain tissue, indicating the existence of the PRmRNA in those tissues.

The rat brain PRmRNA was detected using the RT-PCR with the primer set drived from the human PRcDNA. It was indicated that PRmRNA was widely distributed in the rat brain.

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218 Partial Cloning of Rat Progesterone Receptor cDNA using Reverse Transcription-Polymerase Chain Reaction. S.Hirata, K.Hagihara, M.Hirai, T.Osada, J.Kato. Dept. of Obst. and Gynec., Yamanashi Med. School, Yamanashi.

In order to determine the nucleotide sequence of a part of rat progesterone receptor cDNA, reverse transcription-polymerase chain reaction(RT-PCR)-direct sequencing has been carried out. Although PRcDNA was already cloned and sequenced in human, rabbit and chicken, rat PRcDNA has been not reported yet.

We have synthesized primer set for PCR, which flanked a part of progesterone binding domain of human PRcDNA. The RT-PCR product was 320bp and the nucleotide sequence of the product was determined by direct nucleotide sequencing.

The RT-PCR product had 95.5%, 95.5% and 86.5% amino acid sequence identity and 84.1%, 84.1% and 77.0% similarity at the nucleotide level with the corresponding part of the human, rabbit and chicken PRcDNA, respectively. From these results, the product was confirmed to be a part of rat PRcDNA.

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219 Effect of estrogen, pituitary gonadotropins and prolactin on immunohistochemical localization of inhibin subunits in the ovary of hypophysectomized female rats. M.Kobayashi, S.Minami, M.Yamoto, R.Nakano, Dept.Obst.and Gynec., Wakayama Medical College, Wakayama.

Effects of estrogen, pituitary gonadotropins and prolactin(PRL) on immunohistochemical localization of α- and βA-subunits in the ovaries of hypophysectomized female rats were investigated. Hypophysectomy resulted in disappearance of immunoreactive inhibin subunits in the ovary. Administration of diethylstilbestrol to hypophysectomized rats provoked prominent growth of solid follicles and resulted in positive immunostaining for inhibin subunits in the granulosa cells. FSH administration also stimulated follicle growth and maturation, and positive staining for inhibin subunits was observed in the granulosa cells of solid and antral follicles. LH administration resulted in repair of interstitial cells and follicular growth, and positive staining for inhibin subunits was seen in a number of follicles. In contrast, PRL administration failed to demonstrate positive staining for inhibin subunits in the ovary. The present in vivo results suggest that several hormones which are known to stimulate granulosa cell growth and differentiation enhance inhibin subunits production by the ovary.