

496 Immunoreactive endothelin-1 in human uterus. H. Ohbuchi, M. Mibe, M. Yamaguchi, H. Koike, N. Mori, Dept. Obst. and Gynec., Miyazaki Medical College, Miyazaki.

As there were only a few reports on the presence of endothelin(ET)-1 in the human reproductive organs, using a specific and sensitive radioimmunoassay (RIA) for ET-1 and bigET-1, we measured ir-ET-1 and bigET-1 in human endometrium and myometrium. The materials were obtained when the hysterectomy were performed for various gynecologic reasons. After homogenization of the tissues in acetic acid, ET was extracted, purified with Sep-Pak C<sub>18</sub> column, and the tissue concentration of ir-ET-1 and bigET-1 were measured by RIA. We also characterised them by the reverse phase(RP-)HPLC. The concentration of ir-ET-1 and bigET-1 were higher in the endometrium than those in the myometrium. On RP-HPLC, the major ir-ET-1 and bigET-1 emerged at the positions identical to those of authentic ET-1 and bigET-1. In addition, the avidin-biotin-peroxidase-complex(ABC) immunostaining of human uterus using a monoclonal antibody against ET-1 indicated that characteristic immunostaining of ET-1 and bigET-1 detected in not only some of endothelial cells but also stromal cells. These results suggest the possibility of ET-1 production in endometrial stromal cells, and also of its paracrine or autocrine function in human uterine tissue.

497 Effects of steroid hormone on the activity of PLC and intracellular [ $\text{Ca}^{2+}$ ] change stimulated by oxytocin. E. Fujii, M. Oku, Y. Itani, S. Adachi, K. Morimoto, T. Yamamoto, M. Ichijo, Dept. Obst. and Gynec., Nara Med. Univ., Nara.

We partially purified three different forms of PLC from the cytosol fraction of human myometrium by the technique of high performance liquid chromatography, and studied the effects of steroid hormones ( $\text{E}_1, \text{E}_2, \text{E}_3$ , Progesterone, DHAS) on their enzymatic activities of PLCs. We also studied the effects of progesterone and DHAS on the intracellular [ $\text{Ca}^{2+}$ ] of uterine muscle tissue.

Progesterone suppressed the rate of  $\text{PIP}_2$  hydrolysis by PLC and reduced the oxytocin-induced change of [ $\text{Ca}^{2+}$ ]<sub>i</sub> at concentrations of  $10^{-6} \sim 10^{-4}$  M. In contrast, the change of [ $\text{Ca}^{2+}$ ]<sub>i</sub> and the activity of PLC were increased by DHAS at the concentrations of  $10^{-6} \sim 10^{-4}$  M.

498 Contractile response of the rabbit myometrium to adenosine 5'-triphosphate (ATP); an analytical study on the contractile mechanism. Y. Suzuki, T. Ohkawa, C. Endo, K. Hoshi, A. Sato, H. Nakanishi, Dept. Obst. and Gynec., Dept. of Pharmacol., Fukushima Medical College, Fukushima.

In both non-pregnant and pregnant rabbit myometria, adenosine 5'-triphosphate (ATP) produced contractions in a concentration-dependent manner. Furthermore, ATP (100  $\mu$ M and 1 mM) produced a rapid twitch-like contraction followed by augmented spontaneous motility. The  $\text{pD}_2$  values for the contractile response to ATP were 5.20 and 6.70 in non-pregnant and pregnant myometrium, respectively ( $p < 0.05$ ). ATP increased the synthesis of prostaglandins (PGs) in a concentration-dependent manner as following order; 6-keto- $\text{PGF}_{1\alpha} > \text{PGE}_2 > \text{PGF}_{2\alpha} > \text{thromboxane B}_2$ . ATP also stimulated phosphatidylinositol (PI) hydrolysis in a concentration-dependent manner. The increase of PGs synthesis and the stimulation of PI hydrolysis induced by ATP in pregnant myometrium were more marked than those in non-pregnant myometrium. These results indicate that ATP stimulates PGs synthesis and PI hydrolysis through an effect on  $\text{P}_{2\gamma}$ -purinoceptor and consequently augments myometrial contractility. Moreover, there is a possibility that the change in the features of  $\text{P}_{2\gamma}$ -purinoceptor or the change in the intracellular signal transduction system with PGs synthesis and PI hydrolysis occurs in accordance with being pregnancy.