487 Involvement of tyrosine phosphorylation in the regulation of mouse oocyte maturation. *H. Kimura; *Y. Endo; **R. Fukuyama; *M. Oba; **N. Shimizu; *S. Suzuki; *S. Nozawa, *Dept. of Obstetrics & Gynecology and **Molecular Biology, Keio University School of Med., Tokyo.

This study was undertaken to investigate the role of tyrosine phosphorylation in mouse oocyte maturation using genistein, an inhibitor of tyrosine protein kinase. The oocytes were cultured in MEM/PVP containing 0 to 30 μg/ml genistein in the absence of dbcAMP and germinal vesicle breakdown (GVBD) was scored. Furthermore the oocytes were incubated in MEM/PVP for 2 hr and those that had undergone GVBD were transferred to the medium containing 0 to 30 μg/ml genistein. The percentage of oocytes with a polar body was scored after 16-18 hr. Genistein inhibited GVBD in a dose-dependent manner (ED_{50}:20 μg/ml). The addition of 30 μg/ml genistein to the medium after 45 min culture in the absence of dbcAMP resulted in 50% inhibition of GVBD. Tyrosine phosphorylation might be implicated in the regulation of GVBD after a decrease in cAMP levels. Moreover, the addition of 30 μg/ml genistein to the medium after the completion of GVBD brought about the strong inhibition of polar body emission. This suggests that tyrosine phosphorylation might be involved in the regulation of mouse oocyte maturation.

488 Changes in structure and composition of glycolipids in human fallopian tube, endometrium, and cervical glands during the menstrual cycle. K. Takamatsu, A. Horie, T. Fujii, J. Tanaka, K. Kiguchi, F. Tsutsui, S. Nozawa, Dept. Obst. and Gynec., Keio Univ. Sch. Med., Tokyo.

Glycolipids are one of many membrane components and are consisted of an oligosaccharide chain linked to ceramide. They are believed to play an important role in regulating complex cell interactions. For clarifying the functional role of membrane glycolipids, in this study, using quantitative spectrophotometric and thin-layer chromatography techniques and FAB-MS, we compared the glycolipids extracted from three different parts of female reproductive system. The following results were obtained. The structure and composition of major glycolipids extracted from endometrium and cervical glands were the same all the stage of the menstrual cycle. Sulfatide was expressed mainly in the secretory phase in endometrium, but was expressed throughout the menstrual cycle in the fallopian tube. In the case of the major neutral glycolipids, those having hydroxylated ceramide were expressed in the same expression pattern with sulfatide.

These results suggest that the expression of different glycolipids in the female reproductive system is different under the same hormonal conditions. Thus glycolipids may affect the environment around the embryo.

489 Involvement of lipoxygenase pathway in the process of ovulation in rabbits. M.Ando, N.Nakamura, Y.Yoshimura, Y.Hirata*, T.Sawada*, M.Shiraki*, S.Kawakami*, M.Suzuki, Dept. Obst. and Gynec., Kyorin Univ. Sch. Med., Tokyo, *Dept. Obst. and Gynec., Fujita-Gakuen Health Univ. Sch. Med., Aichi.

The present study was undertaken to assess the effects of lipoxygenase products on ovulation, oocyte maturation and steroid production in the perfursed rabbit ovary preparation. The addition of nordihydroguaiaretic acid (NDGA) to the perfusate inhibited hCG-induced ovulation in a dose-related manner. Leukotriene B_4(LTB_4) production by the perfused rabbit ovaries reached its maximum 6 hours following exposure to hCG and then declined. The addition of NDGA at 10^{-5}M significantly inhibited hCG-stimulated LTB_4 production by rabbit ovaries throughout the entire perfusion periods. The ovulatory efficiency in ovaries treated with hCG alone or with hCG plus NDGA correlated significantly with LTB_4 production by perfused rabbit ovaries 6 hours following exposure to hCG (γ=0.6543, $P<0.01$). However, exposure to NDGA affected neither progesterone nor estradiol production elicited by hCG administration. These results suggest that NDGA may block hCG-induced ovulation in vitro, probably via the inhibition of LTB_4 production by rabbit ovaries.