P-10 *In Vitro/In Vivo* Development of Vitrified Immature Mouse Oocytes

Sepill Park, Eun Young Kim, Hwa Kyung Nam, Keum Sil Lee, Sae Young Park San Hyun Yoon*, Kil Saeng Chung and Jin Ho Lim***

*Maria Infertility Medical Institute (마리아기초의학연구소), *Maria Infertility Clinic, Seoul, **College of Animal Husbandry, Kon-Kuk University*

This study was carried out to investigate *in vitro/in vivo* development of vitrified-thawed immature mouse oocytes. Immature mouse oocytes were vitrified with EFS40 (40% ethylene glycol, 18% ficoll and 0.5 M sucrose). Thawed oocytes were matured for 16 hr *in vitro*. Matured oocytes with the first polar body were fertilized with the concentration of $1\text{-}2\times10^6$/ml of epididymal sperm. After fertilzation, cleavage ($\geq$2-cell) and *in vitro/in vivo* development rates were examined. The results were summarized as follows: *in vitro* maturation rate of immature mouse oocytes in the vitrified-thawed group was similar to that in the exposed group (67.5%) and control group (66.3%), but cleavage rate of vitrified-thawed oocytes (64.9%) and blastocyst formation rate (59.0%) were significantly different compared to those of the exposed group (83.7 and 74.7%) and the control group (90.7 and 83.7%) ($p<0.05$). However, when the blastocysts derived from vitrified-thawed immature mouse oocytes were transferred to pseudopregnant mouse, total implantation (31.3%) was slightly lower than that in control (40.8%), but live fetus formation rate (66.7%) was slightly higher than that in the control group (58.1%), there was not significantly different. Therefore, when *in vitro* produced blastocyts were transferred into recipients, although the *in vitro* development of vitrified-thawed oocytes was decreased, live fetus formation rate was similar to that of the control group. The present results indicate that immature mouse oocytes can be frozen successfully by vitrification with EFS40.

P-11 Establishment of In Vitro 3-Dimensional Culture System of Mouse Endometrial Cells
I. Cytohistological Study on Mouse Endometrium

Hwa Kyung Nam, Eun Young Kim, Keum Sil Lee, Sae Young Park, San Hyun Yoon*, Sepill Park and Jin Ho Lim*

*Maria Infertility Medical Institute (마리아기초의학연구소), *Maria Infertility Clinic, Seoul*

This study was designed to identify the ultrastructural changes of mouse endometrium during periimplantation period and obtain the fundamental information for the establishment of 3-dimensional culture system of mouse endometrial cells in vitro. The used female ICR mice (6 wks) were conducted on pregnant. The biopsies were obtained from whole uterus at cycle days 0 (D0) and 4 (D4) (the day of detection of the vaginal plug designated as day -1). The biopsied ma-