

460 Contribution of embryo-derived platelet activating factor in pregnancy establishment in mice; a study with a PAF antagonist, CV-6209. M.Ando, H.Suginami, S.Matsuura, Dept.Obst.and Gynec., Ehime Univ.Sch.Med., Ehime.

Mouse embryos secrete an embryo-derived platelet activating factor (EDPAF), reducing platelets in maternal circulation during the preimplantation period. The present study was conducted to investigate the role of EDPAF in pregnancy establishment by using a specific PAF antagonist, CV-6209. 1) CV-6209, when 8-hourly administered intraperitoneally during the post-coital day 1 through day 6, increased dose-dependently the proportion of maternal mice conceiving small litter sizes. 2) When administered on various fractional days of pregnancy, pregnancy suppression by CV-6209 was most pronounced in mice treated on days 4-5. 3) Day 4 embryos recovered from CV-6209-treated mice represented normal in vivo and further in vitro development. 4) In utero transfer of day 4 embryos to synchronized pseudopregnant recipients pretreated with CV-6209 resulted in decreased rates of both implantation and fetal development in comparison to those in saline-treated recipients (41.9% vs 75.2% and 36.2% vs 57.1%, respectively). CV-6209 was suggested to suppress pregnancy by antagonizing EDPAF. EDPAF might be prerequisite in pregnancy establishment in mice presumably through enhancing uterine receptivity of the embryos.

461 Effects of saccharides on human fertilization. K.Mori, T.Daitoh, M.Hirano, T.Aono, M.Kamada*, Dept. Obst. and Gynec., Tokushima Univ. Sch. Med., Tokushima, *and, Kagawa Prefectural Tsuda Hosp., Kagawa.

We have reported that D-mannose plays an important role in human fertilization and possibly relates to sperm receptor site presented in the zona pellucida. In this study, we examined effects of saccharides on fertilization by zona penetration test using human zona pellucida matured in vitro and on acrosome reaction by triple stain technique.

When spermatozoa were treated with 50mM D-mannose or D-fructose, no spermatozoa was found in perivitelline space. The inhibitory effect of D-mannose on sperm penetration was reversed by succeeding rinse with culture medium alone. Triple stain technique revealed that the numbers of acrosome reacted spermatozoa did not increase during incubation with 50mM D-fructose up to 6 hours and the percentage of acrosome reacted spermatozoa (3.1%) was significantly low ($p < 0.05$) compared with that (4.9%) in the control group. On the other hand, D-mannose did not affect the acrosome reaction. These data strongly support our hypothesis that D-mannose plays an important role as a constituent of sperm receptor site. These results also suggest the significance of D-fructose as a decapacitation factor that may be contained in seminal plasma.

462 The effect of protein supplement on mouse in vitro fertilization and embryo development. M.Tanikawa, Y.Ohnohara, H.Terado, T.Harada, T.Toda, Y.Mio, K.Maeda, Dept.Obst.and Gynec., Tottori Univ.Sch.Med., Tottori.

The effect of protein supplement on F-1(C57BL × CBA) mouse in vitro fertilization(IVF) and embryo development was examined. Fertilization rates were 89.7%, 76.4%, 76.0% and 87.9% in culture medium(BWW) supplemented with bovine serum albumin(BSA), human serum albumin(HSA), human serum(HS) and fetal cord serum(FCS) respectively. Development rates to blastocyst were 87.2%, 61.9%, 66.3% and 34.5% after 96 hours of culture supplemented with BSA, HSA, HS and FCS. Furthermore we collected in vivo fertilized single-cell embryos to exclude the effect of IVF and compared development rates in each culture medium to those of in vitro fertilized embryos. Development rates of in vivo and in vitro fertilized embryos in each culture medium showed same tendency. These results suggest that BSA is optimal protein supplement for mouse IVF and embryo development and FCS may have detrimental effect on mouse embryo development.