Japan Society of Obstetrics and Gynecology

123 Development of Mouse Early Embryos in CZB Medium. S. Fujimori, H. Yazawa, K. Yanagida, K. Hoshi, A. Sato., Dept. of Obstetrics and Gynecology, Fukushima Medical College, Fukushima.

Mouse(ICR) pronuclear embryos were cultured in CZB medium containing glutamine and EDTA, or mBWW medium. The rate (52.7%) of blastocyst cultured in CZB medium increased significantly compared with culture in mBWW(4.5%). The same effects were observed with mBWW medium added with EDTA(0.8%). The rate of blastocyst in CZB medium with the addition of glucose on Day 3 is 45.9%. The present study suggests that glucose is not necessary for early embryos to develop to the blastocyst, and the addition of glutamine to the medium is an important factor. The CZB medium is very useful for IVF-ET program.

124 Dual functions of Activin A in the Fertilization in Vitro in the mouse
K.Yamada, H.Mizunuma, T.Kamijoh, M.Itoh, Y.Hasegawa, Y.Ibuki, M.Igarashi
Dept. Ob & Gyn, Gunma Univ. School of Medicine, Maebashi, Gunma

Activin A was added to the culture medium in the IVF system in the mouse. Oocytes were collected from the fallopian tube by superovulation. Cumulus oophorus was removed by hyaluronidase. They were co-cultured with spermatozoa collected from the seminal vesicle. Fertilization was evaluated by the presences of 2 pronuclei and a second polar body after 8-12 hours of insemination. As our previous study, cumulus removal lowered the fertilization rates (36 %) as compared with those without cumulus removal (72 %). Fertilization rates were significantly lower with the addition of low doses of Activin A in cumulus removed group (21 % in 5pg/ml Activin A and 19 % in 500pg/ml Activin A) and cumulus intact group (57 % in 5pg/ml Activin A and 53 % in 500pg/ml Activin A). With a higher dose (500 ng/ml) of Activin A, the fertilization rates recovered to the level of those without Activin A in both groups. These data suggest that Activin A has dual functions in the fertilization in vitro, inhibitory effect with low dose and stimulatory effect with higher dose in the mouse.

125 Zona induced acrosome reaction of human spermatozoa and the influence of cervical mucus and cumulus oopholus on the acrosome reation. N.Yoshimatsu, T.Sugano, K.Hoshi, A.Sato. Dept. of Obstet. Gynecol. , Fukushima Medical College, Fukushima.

Zona induced acrosome reaction of human spermatozoa was examined by using FITC labelled PSA staining. Salt stored eggs were placed in a droplet of $10x10^6$ sperm/ml, and incubated for 6hrs. After that, spermatozoa attached to the zona were removed and collected by pipetting. The rate of zona induced acrosome reaction was 48.3+18.2% and this rate was significantly higher than that of spontaneous acrosome reaction (4.9+2.4%). These data confirm that human zona has the ability to induce the acrosome reaction as other mammalian zona. Additionaly the effect of cervical mucus and cumulus oopholus on the acrosome reaction was examined. Spermatozoa which passed through the cervical mucus were collected and examined the rate of spontaneous and zona induced acrosome reaction. The rate of spontaneous acrosome reaction of these spermatozoa was almost same to the control value, but the rate of zona induced acrosome reaction was significantly higher than that of control. But cumulus oopholus had no effect on the both acrosome reactions. These data suggest that spermatozoa appear to complete capacitation by passing through cervical mucus.

NII-Electronic Library Service