

Studies on the Oocytes Activation Regimed for Nuclear Transfer and Co-culture of Nuclear Transferred Embryos

S.K. Kim and D.S. Lee

Coll. of Vet. Med, Chungnam National University

This study was carried out to investigate the optimal activation condition for parthenogenetic development. In order to activate oocytes at 24 hrs post onset of maturation, the oocytes were cultured 3-13 μ M Ca for 5 min., 5-8 μ g/ml cytoclacin(CH) for 6 hrs, 0.5-2.0 mM 6-dimethylaminopurine(DMAP) for 3 hrs alone or combination. The activated oocytes were cultured in TCM-199 media at 5% CO₂, 95% N₂, 38°C.

1. The cleavage rate after 48 hrs culture of oocytes treated with 3-13 μ M Ca for 5 min. were 9.6%~20.0% and 3.8~7.3%, respectively. When oocyte were treated with 10 μ M Ca, the blastocyst formation rate was significantly higher than other group.

2. The cleavage rate after 48 hrs culture of oocytes treated with 5-8 μ g/ml cytoclacin(CH) for 6 hrs, were 9.4%~21.8% and 0.0~7.3%, respectively. When oocyte were treated with 10 μ g/ml CH, the blastocyst formation rate was significantly higher than other group.

3. The cleavage rate after 48 hrs culture of oocytes treated with 0.5-2.0 mM 6-dimethylaminopurine(DMAP) for 3 hrs were 9.1%~21.8% and 0.0~7.3%, respectively. When oocyte were treated with 2.0 mM DMAP, the blastocyst formation rate was significantly higher than other group.

4. The cleavage rate after 48 hrs culture of oocytes treated with Ca + CH, Ca + DMAP, CH + DMAP were 75.9%~93.5% and 9.7~13.3%, respectively. When oocytes were treated with Ca followed by DMAP, the blastocyst formation rate was significantly higher than other group(p<0.05).

5. When nucleus transferred embryos co-cultured with BSA, EGF and CS, the developmental rate to blastocyst were higher than control group.

(Key words : Parthenogenetic development, Ca, Cytoclacin DMAP)