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Effects of Activation Treatment on IVM/IVF Rate of Canine Oocytes

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This study was carried out to investigate the optimal activation condition for parthenogenetic development of canine oocytes. In order to activate oocytes at 24 hrs post onset of maturation, the oocytes were cultured 7% Et for 5 min, 10 μM Ca-IP for 5 min., 10 μg/mL CH for 6 hrs, 2.0 mM DMAP for 3 hrs alone or combination. The activated oocytes were cultured in TCM-199 media at 5% CO_2, 95% air, 38°C.

1. IVM rate of oocytes matured *in vitro* for 5, 10 hrs after single activation treatment by ethanol, Ca-IP and CH were 22.0%, 25.0%, 20.0% and 11.0%, 13.0%, 8.0%, respectively. The IVM rate to GV stage of oocytes matured *in vitro* for 5 hrs after activation by Ca-CH were higher than treatment by Et and Ca-IP.
2. IVM rate of oocytes matured *in vitro* for 5, 10 hrs after combined activation treatment by Ca + DMAP, CH + DMAP and Et + CH were 35.0%, 32.0%, 26.0% and 22.0%, 18.0%, 16.0%, respectively. This was higher than that of control group of non-treatment (14% and 5%). The activation rate was significantly higher in both single ($p<0.05$) and combined ($p<0.01$) stimulated groups compared to control group.
3. IVF and cleavage rates of oocytes after combined activation treatment by Ca + DMAP, CH + DMAP and Et + CH were 22/40 (57.9%), 18/40 (45.0%), 16.40 (40.0%) and 12/40 (18.4%), 11/40 (27.5%), 8/40 (22.5 %), respectively. This was higher than that of control group of non-treatment (12.5% and 5.0%).