

Influence of growth differentiation factor 9 and bone morphogenetic protein 15 on in vitro maturation of canine oocytes

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© 2018 Blackwell Verlag GmbH Growth differentiation factor 9 (GDF-9) and bone morphogenetic protein 15 (BMP-15) have pivotal roles in oocyte development in many species, therefore the aim was to investigate these factors during in vitro maturation (IVM) of canine oocytes. Canine cumulus oocytes complexes (COCs) were cultured in six groups for 72 hr in a supplemented TCM199-Hepes medium as (a) Control group; (b) GDF-9 antibody (Ab); (c) BMP-15 Ab; (d) recombinant human (rh) GDF-9; (e) rh BMP-15 or (f) rh BMP-15 and GDF-9. Data were evaluated by ANOVA. The Abs against GDF-9 or BMP-15 had a negative impact on meiotic development. Higher ($p < 0.05$) number of oocytes was arrested at GVBD stage when they were incubated with either GDF-9 Ab ($64.4 \pm 2.1\%$) or BMP-15 Ab ($67.2\% \pm 4.9\%$) in comparison to those in control group ($32.4 \pm 7.8\%$). In contrast, more ($p < 0.05$) oocytes in control group reached MI ($37.4 \pm 1.3\%$) and MII stages ($10.2 \pm 2.1\%$) comparing to those groups with GDF-9 Ab ($23.1 \pm 4.7\%$)