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Effect of FSH and LH on Cumulus Expansion and Nuclear Maturation of Canine Oocyte

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The FSH and LH play an important roles in the regulation of cumulus expansion and oocyte maturation. We investigated the effects of supplements of FSH or LH in IVM medium on the incidence of cumulus expansion and maturation in canine oocyte. Oocytes were cultured in TCM-199 supplemented with 10% FBS, 1 mg/ml cysteine, 0.2 mM pyruvic acid and different concentrations of FSH or LH (0, 0.5, 5 or 50 ug/ml), respectively, at 38.5℃, 5% CO_2 in air. After 72 h IVM, cumulus expansion was measured by microscope eyepiece (IX70; Olympus) and nuclear maturation of denuded oocytes were determined by staining with 10 ug/ml Hoechst33342 for 40 min. The cumulus expansion in 5 ug/ml FSH group (397.2±64.3 um) was significant higher than those of other FSH groups and control (168.3±19.1 um; $P < 0.05$). There was not significantly different in nuclear maturation to MII stage among 0.0, 27.3, 12.5 and 8.3% in the control, 0.5, 5 and 50 ug/ml FSH groups, respectively. However, there was no difference in cumulus expansion and nuclear maturation to MII among control, 0.5, 5 and 50 ug/ml LH groups ($P > 0.05$).

This results indicated that although FSH supplement in IVM medium can induce the cumulus cell expansion, the supplement of FSH or LH could not improved the meiotic maturation to metaphase II.

Key words: ***Canine oocyte, FSH, LH, Cumulus expansion***
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