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POSTER

Effects of biotin supplementation on the in vitro maturation of oocytes and the development of parthenogenetic diploid porcine embryos

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Abstract

In mammals, Biotin serves a coenzyme in the metabolism of glucose, amino acids, and fatty acids. Biotin deficiency causes decreased rates of cell proliferation, disfunction in germ cells and fetal development. This study was carried out to determine the influence of Biotin supplementation to invitro maturation medium on the development of porcine oocyte and embryos. Biotin (0.0, 1.0, 10.0, 100.0 mg/l, respectively) was added into the oocyte maturation medium, the quality of mature oocytes was evaluated after 42h culturing. The parthenogenetic diploid embryos were produced by using electro-activation system, the quality of embryos was noted at 1-4 cells stage. The results showed that, Biotin can enhance the formation of the first polar body at the concentration of 10 mg/l, it can also improve the activation efficiency of parthenogenetic diploid embryos at the preimplantation stage from 2-4 cells. Therefore, the supplementation of 10mg/l Biotin to the in-vitro maturation medium has a beneficial effect on the parthenogenetic diploid embryos development in the pig.

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