P-74

Effects of water-soluble vitamins on in vitro development of porcine parthenogenetic and nuclear transfer (NT) embryos

Kenji Naruse, Hong Rye Kim, Young Min Shin, Suk Min Chang, Hye Ran Lee, Vaishali Tarte, Yan Shi Quan, Beak Chul Kim, Tae Young Park, Su Min Choi and Chang Sik Park, Dong Il Jin

Research Center for Transgenic and Cloned Pigs, Chungnam National University

The objectives of this study were to determine the effects of vitamins during in vitro maturation (IVM) of porcine NT embryos and parthenogenetic embryos on subsequent developmental capacity in vitro. In parthenogenetic embryos, addition of 0.05% vitamins to maturation medium significantly increased ($P<0.05$) the percentage of blastocyst developmental rates and total cell number of blastocysts than control group. In porcine NT embryos, addition of MEM vitamins to IVM medium significantly increased ($P<0.05$) the percentage of blastocyst developmental rates than control group. However, addition of vitamins to culture medium did not affect the development of porcine oocytes in vitro. In porcine NT embryos, there was no significant difference between MEM vitamins-treated groups and the control group in cleavage rates and total cell number. In conclusion, in parthenogenetic embryos, low concentration of MEM vitamins to IVM medium promoted the subsequent development of porcine oocytes and improved the quality of parthenogenetic development. Similarly, in porcine NT embryos, addition of MEM vitamins to IVM medium promoted the subsequent development of NT embryos and improved the quality of nuclear transfer blastocysts developed in vitro. These results suggested that water-soluble vitamins in IVM enhances the subsequent development of pig embryos in vitro.

Keywords: *Porcine; Oocyte maturation; Nuclear transfer; Vitamins; Blastocyst*