The effectiveness of CR1aa medium on in vitro maturation, fertilization and early embryo development of goat oocyte

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Abstract

The aim of the present study was to compare different media for supporting in vitro maturation, fertilization and early embryo development of goat oocyte. Two kinds of media, namely TCM 199 and CR1aa media were used for in vitro maturation and embryos culture. Three different media, BO, TALP and CR1aa were used for in vitro fertilization. Oocytes were matured in TCM 199 or CR1aa media, respectively, for 24 hours at 38.5°C in 5% CO2 incubator. In vitro fertilization was done in 5% CO2 incubator at 38.5°C using fresh ejaculated sperm. After 8 hours of insemination, zygotes were cultured in two kinds of culture media, namely TCM-199 and CR1aa media, respectively in 5% CO2 incubator up to day-5. The results showed that no significant difference in the percentages of oocytes reaching metaphase II in the two maturation media. The fertilization rate in CR1aa medium (63.2%) was significantly higher (P<0.05) than BO and TALP medium (48.9% and 50.0%, respectively). The cleavage rate and embryos development in CR1aa medium were 49.76% and 39.63%, they were significant (P<0.05) than those in TCM 199 medium (40.84% and 29.58%).

Keywords: CR1aa – goat – maturation – fertilization – development.

Introduction

Efficient in vitro procedures for oocytes maturation and fertilization in large domestic species are important for development of new biotechnological protocol such as gene transfer and in vitro multiplication of identical embryos (De Smedt et al., 1992). Techniques for production of embryos are being widely used in numerous laboratories. Although the in vitro maturation and fertilization oocytes for two other domestic ruminant species (cattle and sheep) have been extensively investigated (Crozet et al., 1987; Boediono et al., 1994), information on the production of goat embryos from in vitro matured and fertilized oocytes is limited.

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