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The effectivity 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% CO_2 incubator. *In vitro* fertilization was done in 5% CO_2 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% CO_2 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.*, 1944), information on the production of goat embryos from *in vitro* matured and fertilized oocytes is limited.

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