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IN VITRO DEVELOPMENT OF CAPRINE EMBRYO IN DIFFERENT CULTURE MEDIA USING CRYOPRESERVED BLACK BENGAL BUCK SEMEN

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ABSTRACT

The aim of the present study was to check the effect of different culture media on *in vitro* development of goat embryo produced through in vitro fertilization using cryopreserved black Bengal buck semen. So far cryopreserved black Bengal buck semen was not used to produce goat embryo by in vitro fertilization. Cumulus oocyte complexes (COCs) were collected from slaughterhouse ovaries, washed 5-6 times and cultured in maturation media for 27 h in 5% CO_2 incubator at 38.5 ºC with maximum humidity. Cryopreserved semen straws were thawed and sperms were capacitated in vitro. After 27 h of incubation cumulus cells were stripped off from matured oocytes. Denuded oocytes were transferred to acidified Tyrode's medium for zona thinning and were co-incubated with capacitated sperms for fertilization in Fert-BO media at 38.5 ºC in 5% CO_2 in air with maximum humidity. In the experiment I, fresh buck semen and in experiment II, frozen buck semen was used for in vitro fertilization after in vitro processing. After 5 h of co-incubation, presumptive zygotes were washed and co-incubated with oviductal cells in three different media (RVCL, mSOF, KSOM) for further development. In fresh group cleavage rates (%) were 37.76 ± 2.98, 39.60 ± 1.75, 29.01 ± 1.74, and morula formation (%) were 7.72 ± 3.38, 6.03 ± 1.29, and 3.00 ± 3.00 in RVCL, mSOF and KSOM media respectively. However, in frozen group the overall cleavage rates (%) were 29.17 ± 2.56, 27.70 ± 2.31, 24.17 ± 1.44 in RVCL, mSOF and KSOM media respectively and morula formation (%) was 2.93 ± 0.97 only in RVCL media. These results indicate that cryopreserved black Bengal buck semen have competence to

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