

Effects of oocyte recovery methods and culture media on the development of *in vitro* produced caprine embryos ⁽¹⁾

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Abstract

The aim of this study was to establish some strategies for more effective *in vitro* goat embryo production. The result of slicing method could obtain significantly more cumulus-oocyte complexes (COCs) in good quality compared to aspiration method (55.7% vs. 33.0%) ($P < 0.05$), but there was no significant difference in the oocytes developed to M II stage after IVM in two methods (78.3% vs. 77.7%). In the COCs collected with slicing method and by IVM-IVF and subsequently cultured in the synthetic oviduct fluid solution (SOF) medium or co-culture medium with cumulus cell dividedly, both of the cleavage rates (28.2% vs. 37.1%) and blastocyst rates (4.3% vs. 0.0%) were similar. However, only the COCs cultured in SOF medium had the chance to break out of the block stage and developing to blastocyst stage. In addition, the effects of the supplements of cysteamine and/or epidermal growth factor (EGF) into the usual IVM medium (control) on the development rate of *in vitro* culture (IVC) after IVM-IVF have valuated. Results showed that the blastocyst rate of the IVM medium in the supplement of cysteamine combined with EGF was significant higher than the other two groups (36.1% vs. 15.7% and 10.0%). In conclusion, the COCs collected using slicing method from goats, and the supplement of cysteamine combined with EGF in the medium could obtain more high quality matured oocytes. Furthermore, it had the advantage of higher blastocyst production rate of the matured oocytes *in vitro* fertilized, and subsequently cultured in the SOF medium.

Key words: Goat, Oocytes collection method, Culture medium, Maturation rate, Embryo development ability.

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