

Comparison of Two Vitrification Methods of *In Vitro* Development Oocytes Collected from Porcine Antral Follicles Using Open Pulled Straw (OPS) Techniques

Mihyun An, Daewuk Hong, Dongsoo Son*, Hobong Seok

*Department of Animal Science, College of Bio-Life Science, Dankook University Cheonan, *National Livestock Research Institute, Seongwhan*

The advantages of the OPS techniques(Vajta G et al, Mol Reprod Dev 51: 53-58,1998) give 1) high survival rates of various types of eggs, 2) quick and simple process, 3) inexpensive equipment and reduced chilling injury. The efficiency of IVM/IVF technique in the porcine species is relatively lower than that obtained in other species such as ruminants. Two experiments were designed to investigate the effects of in-vitro fertilization of porcine oocytes matures using different OPS protocol for chilling and warming of vitrification. Porcine oocytes from ovaries collected at abattoir were matured for 44 hours in TCM199 Earle's salt supplemental with pyruvate, pff, L-cysteine, hormones and gentamycin. Oocytes were denuded and fertilized with frozen boar semen by common method. Porcine embryos produced routinely by in-vitro culture system of NCSU23 medium. The vitrification and the warming were conducted by OPS method with the glass micropipette instead of straw vessels and modified the protocol of G.Vajta(1999). In Exp 1, Chilling/Warming: Holding Medium(HM)+EG+DMSO/HM +Sucrose Medium(SM) at 39°C warm stage. In Exp 2, : PBS+CS +EG+Ficoll+Trehalose/PBS+Trehalose at 25°C stage. Filling, freezing, packing, thawing out and further culturing were performed to follow the basic protocol of G Vajta. During IVM-IVC and post-warming, fertilization parameter and developmental potential were compared to and statistically analysed. It was not significantly different from Exp 1 and Exp 2 but 25°C of stage was slightly higher on the morula/blastocyst forming rate and better atmosphere for worker than that at 39°C stage.

Key words) *porcine oocyte, vitrification, open pulled straw, antral follicles*