

Effects of Embryo Developmental Stage and Superoxide Dismutase on the Survival of Frozen-Thawed Porcine Embryos by Open Pulled Straw (OPS) Method

Sang-Young Lee^{1†}, Jae-Suck Yu¹ and Choon-Keun Park²

¹*Biotechnology Division, Gyeongsangnam Province Advanced Swine Research Institute*

²*College of Animal Life Science, Kangwon National University*

This study was performed to investigate the effects of embryo developmental stage and superoxide dismutase (SOD) on the survival of frozen-thawed porcine embryos by open pulled straw(OPS) method. Porcine IVF blastocysts were frozen-thawed by OPS method and cultured for 48 h under the existence of SOD. There are no significant differences in the proportions of normal morphology among the early, mid- and expanded blastocyst stages (30.8~38.6%). After culture of embryos, the developmental rates to the expanded blastocyst stage(38.7%) were significantly higher than those of other stages ($p < 0.05$). The proportions of expanded and hatched embryos were higher in medium with 1 unit/mL SOD than 0 and 10 units/mL of SOD. The result indicates that OPS method can use for the pig embryo cryopreservation, especially for the late stage blastocysts. SOD may can reduce the damage of frozen-thawed porcine embryos.

Key words) *OPS, SOD, Pig blastocyst, Survival ability*