

## Studies on Development of Porcine Nuclear Transfer Embryos

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This study was investigated *in vitro* maturation rate of oocytes cultured in maturation media with or without supplementation of EGF,  $\beta$ -ME, glucose and further development of NT embryos reconstructed with differently subcultured cells cultured in different media and gas atmospheres.

1. When the embryos were cultured in NCSU-23 or PZM-3 supplemented with or without 20 ng/mL EGF and 25  $\mu$ M  $\beta$ -ME for 144 h, the development rates to blastocyst stage were  $12.0 \pm 1.3\%$ ,  $9.6 \pm 1.9\%$ ,  $10.9 \pm 2.1\%$  and  $9.1 \pm 2.3\%$  and  $9.6 \pm 1.7\%$ ,  $7.3 \pm 2.3\%$ ,  $11.9 \pm 1.8\%$  and  $7.4 \pm 2.1\%$ , respectively ( $p < 0.05$ ).
2. When the embryos were cultured in NCSU-23 or PZM-3 supplemented with or without 1.5 mM glucose for 144 h, the development rates to the blastocyst stage were  $9.4 \pm 2.2\%$ ,  $6.8 \pm 2.7\%$ ,  $10.9 \pm 2.4\%$  and  $8.9 \pm 2.6\%$ , respectively.
3. When NT embryos were cultured in NUSU-23 and PZM-3 at 5% and 20% O<sub>2</sub> concentration, the developmental rates to blastocyst stage were  $11.1 \pm 1.8\%$ ,  $9.8 \pm 1.4\%$ ,  $12.5 \pm 1.6\%$  and  $10.9 \pm 1.5\%$ , respectively. The developmental rate to the blastocyst stage of NT embryos cultured in both NCSU-23 and PZM-3 at 5% O<sub>2</sub> concentration was higher than cultured at 20% O<sub>2</sub> concentration.
4. When fetal fibroblasts were cultured in NCSU-23 and used as donor cells for NT embryos, the fusion rate of less than 10 passage was higher than those of 11~15 passage (60.0~73.3% versus 52.5%). When fetal fibroblasts were cultured in PZM-3 and used as donor cells for NT embryos, the fusion rate of less than 10 passage was higher than those of 11~15 passage (60.4~75.1% versus 58.7%).