EFFECT OF *XENOPUS* EGG EXTRACT TREATMENT OF DONOR CELLS ON PORCINE SOMATIC CELL NUCLEAR TRANSFER

Y. Liu^{*1}, O. Østrup⁴, J. Li¹, G. Vajta⁵, L. Lin^{1,3}, P. M. Kragh¹, S. Purup², H. Callesen¹

Dept. Genet. Biotech., Faculty of Agricultural Sciences, Aarhus Univ. Denmark¹, Dept. Anim. Health Biosci., Faculty of Agricultural Sciences, Aarhus Univ., Denmark², Dept. Hum. Genet., Faculty of Health Sciences, Aarhus Univ., Denmark³, Dept. Anim. Vet. Basic Sci., KU-LIFE, Copenhagen, Denmark⁴, PIVET Medical Centre, Perth, Australia⁵

Introduction

Pretreatment of somatic cells to promote subsequent reprogramming during somatic cell nuclear transfer (SCNT) may significantly improve efficiency of the technique. The aim of this study was to evaluate the effect of *Xenopus laevis* egg extract pretreatment of porcine fetal fibroblast cells using different permeabilization agents prior to SCNT.

Materials and Methods

Results

Table 1. Effect of different permeabilization agents prior to SCNT

Donor cell permeabilization	Days before use of treated cells	No. of reconstructed embryos (Day 0)	% Cleavage (Day 2) ¹	% Blastocyst (Day 6) ¹	Cell no. (Day 6 blastocyst) ¹
Streptolysin O (SETC)	Day 1	80	66±8 ^b	30±3 ^b	63±5 ^a
	Day 3	139	84±3 ^a	40±4 ^{a,b}	82±4 ^b
	Day 5	79	87±3 ^a	33±3 ^b	68±3 ^a
	control	119	87±2 ^a	47±4 ^a	64±4 ^a
Digitonin (DETC)	Day 3	145	89±2 ^A	39±2 ^{A,B}	62±4 ^A
	Day 5	118	91±2 ^A	46±4 ^A	72±4 ^A
	control	180	93±1 ^A	34±3 ^B	64±4 ^A

a, b and A,B Values with different letter differ significantly ($P<0.05$). ¹Mean±SEM

Conclusion

In conclusion, qualitative efficiency of porcine SCNT could be improved with a combined donor cell permeabilization and extract treatment.