Effect of second time *Xenopus* egg extract treatment on colony formation and cloned blastocyst formation in pig

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Introduction and Aim

- ❖ Extract from *Xenopus* eggs can induce reprogramming in somatic cells.
- ❖ In our previous study, cell colony formation was induced during culture of porcine fetal fibroblasts after a single treatment with *Xenopus* egg extract and culture for several passages, and using these long-term cultured cells for cloning increased the resulting blastocyst rate (Liu et al. 2011 Reprod Fertil Dev 23:130).
- ❖ However, both colony number and cloned blastocyst rate decreased using cells after Passage 15, and no colonies formed when cells were used after Passage 18.
- ❖ Aim of this study: to investigate the effect of a second extract treatment on (i) colony formation on porcine fetal fibroblasts and on (ii) blastocyst formation after use of these cells for cloning.

Materials and Methods

Results

Colony formation during culture of porcine fibroblasts extract-treated once (ExT) or twice (2ExT)

* 2ExT P1 = ExT P14.

Blastocyst rate of cloned embryos produced with ExT and 2ExT colony cells or control cells

Group (ExT)	Blastocyst % (No.) ¹	Group (2ExT)	Blastocyst % (No.) ¹
P14	65±7% (170) ^a	P1	70±6% (82) ^a
Control	57±5% (168) ^a	Control	62±9% (78) ^a
P16	57±10% (85) ^a	P3	74±11% (60) ^a
Control	45±12% (84) ^a	Control	50±14% (56) ^b
P19	-	P6	64±14% (101) ^a
Control	-	Control	45±10% (96) ^b

1: mean ± SD; a, b: significant difference, P<0.05

Conclusion and Discussion

A second extract treatment can induce colony formation and increase cloned blastocyst rates, indicating that this repeated extract treatment could again activate the extract-treated cells to an activity level similar to those achieved after the first extract treatment.