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Egfp Gene Expression in Nuclear Transfer-Derived Embryos and The Production of Cloned Transgenic Pig from Fetus-Derived Fibroblasts

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Genetically modified domestic animals have many potential applications ranging from basic research to production agriculture. One of the goals in transgenic animal production schemes is to reliably predict the expression pattern of the foreign gene. Establishing a method to screen genetically modified embryos for transgene expression before transfer to surrogates may improve the likelihood of producing offspring with the desired expression pattern. In order to determine how transgene expression may be regulated in the early embryo, we generated porcine embryos from two distinct genetically modified cell lines by using the nuclear transfer (NT) technique. Both cell lines expressed the enhanced green fluorescent protein (eGFP); It was a fetal derived fibroblast cell line into which the eGFP gene was introduced by a retroviral vector and effecteine(transfection reagent). The reconstructed embryos were activated by electrical pulses and cultured in NCSU23. Although the *in vitro* developmental ability and the eGFP expression pattern of each group of NT embryos was not different. Here we demonstrate that transgene expression in all the blastomeres of an NT embryo is not uniform. In addition, transgene expression in a genetically manipulated embryo may not be an accurate indicator of expression in the resulting offspring.

Key words: ***EGFP, Cloned pigs, Muclear transfer, Embryo transfer, Pig***