P0413

Development of hFSH Transgenic Embryo by Gene Transfected Bovine Fetal Fibroblasts

ByoungChul Yang, DongHoon Kim, GiSun Im, HyoSuk Park, SeWoong Kim, JinSung Seo, InSun Hwang, BoSuk Yang and WonKyong Chang

National Livestock Research Institute, RDA, Suwon 441-706

The purpose of this study was to development of transgenic cow using the nuclear transfer. To secrete hFSH in urea, the vector was constructed with UPII promoter. The fetal fibroblast cells (KbFF) were constructed from pregnant day 45 male fetus. The hFSH genes were cotransfected with pcDNA3 (neo) vector to KbFF cells by electroporation. The gene-transfected cells were cultured with G-418 selection medium for 2 weeks. Selected colonies were confirmed by PCR. For nuclear transfer, enucleated bovine oocytes were transferred with hFSH transfected or nontransfected fetal fibroblasts. After 48h of culture, with hFSH transfected cells, 68.7% of embryos were cleavage and after 8 days of culture, 22.8% of embryos were developed to blastocysts stage. While using the hFSH nontransfected cells, 80.2% of cleavage and 24.5% of blastocyst development, respectively. Apoptosis analysis results of hFSH transfected and non transfected blastocysts were not significant. The blastocysts were transfered to 53 recipient cows. Two calves were bought but it was found no transfected calves. This result shows that the hFSH colonies were mixed with transfected and non transfected colonies.

Key words: ***hFSH, Fetal fibroblast, Electroporation, Nuclear transfer***