

## **Effects of cell type and cell synchronization on bovine nuclear transfer embryo development**

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The objective of this study was to examine the effect of cell type and cell synchronization on somatic cell cloning (SSC). Bovine oocytes isolated from slaughterhouse ovaries were matured for 18 hours and used as cytoplasm sources. As nuclear material source, cartilage and fibroblast cells obtained from the ear tissue of a male Anatolian grey bull were used. In the first experiment, prior to NT, all somatic cells were allowed to grow to confluency (G1/G0) in DMEM-F12 supplemented with 10% FBS. After transfer of single cells to enucleated oocytes, oocyte-cell couples were fused by a DC pulse of 133V/500  $\mu$ m for 30  $\mu$ s in the Zimmerman's medium. After fusion, fused Nuclear transfer (NT) units were activated using a combination of CaI (5 $\mu$ M for 5 min), cytochalasin D (2.5  $\mu$ g/ml) and cycloheximide (CHX, 10 $\mu$ g/ml) for 1 h and CHX alone for 4 h. In the second experiment, prior to NT, cartilage cells were culture either in DMEM-F12 supplemented with 10 % FBS to confluency ( group 1) or in DMEM-F12 supplemented with 10 % FBS and 15  $\mu$ M roscovitine for 24 hr (group 2). In the first experiment, blastocys formation rate was higher on NT embryos from cartilage cells (26.8%) than from fibroblast cells (17.8). In the second experiment, blastocys formation rate was higher on NT embryos from group 1 (20 %) than from group 2(7 %). The results indicate that cartilage cells and confluency have beneficial effect on NT embryo development. This study was supported by grants from TUBITAK (TOVAG-104O360 and KAMAG-106G005). Correspondence: [Sezen.Arat@mam.gov.tr](mailto:Sezen.Arat@mam.gov.tr).