

Effect of Growth Factors on Development of Nuclear Transfer Embryos from Cartilage Cell of an Anatolian Native Cow

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The objective of this study was to examine the effect of growth factors on the maturation, and development of nuclear transfer(NT) embryos. In the first experiment, bovine oocytes isolated from slaughterhouse ovaries were matured in TCM199 supplemented with 10% FBS, sodiumpyruvate, bFSH, and bLH without growth factors (grup 1) or with EGF(group 2) or with 10ng/ml EGF and 100ng/ml IGF-1 (group 3) for 18 hours. Maturation rates were higher in group 2 and 3 (75 % and 75% respectively) than in group 1(64 %). In the second experiment, after maturation, oocytes from group 3 as cytoplasm sources and cartilage cells obtained from the ear tissue of a cow as donor were used. NT units were cultured in Sage cleavage medium supplemented with 8 mg/ml BSA for 72 h and then developing embryos were divided into six groups and culture in Sage with 8mg/ml BSA, Sage with 8 mg/ml BSA and % 5 FCS, Sage with 4 mg/ml BSA and %5 FCS, Sage with 4mg/ml BSA and 100ng/ml IGF-1, Sage with 4 mg/ml BSA,100ng/ml IGF-1 and %5FCS, Sage with 8 mg/ml BSA and 100ng/ml IGF-1 for additional 4 days. Development rates to blastocyst were higher in group 2,3,5 (19 %, 24 % 15% respectively) than in group 1,4,5 (7 %, 9%, 6%). The results indicate that growth factors have beneficial effect on oocyte maturation and blastocyst development if they are added in culture medium with serum. This study was supported by grants from TUBITAK, Turkey (TOVAG-104O360 and KAMAG-106G005).