

## **THE EFFECT OF COOLING RATE ON THE VIABILITY OF PRIMARY BOVINE CHONDROCYTES AND MYOCYTES**

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Cell cryopreservation is an important approach for cell banking. The usual procedure for preserving the viability of mammalian cells by freezing involves suspending them in a presumably permeating additive such as DMSO and cooling them at about 1°C per min. In this study we have investigated the effect of different cooling rates on primary bovine chondrocyte / myocyte viability and proliferative activity after rapid thawing. Cells were cooled in %10 DMSO freezing media at 1°C/min, 2°C/min and 0,5°C/min. Vitrification was applied to determine the appropriateness for storage of somatic cells. The morphology and viability of thawed cells was evaluated by trypan blue staining; metabolic activity was measured by MTT assay after thawing. Results showed that the post-thawing viability of chondrocytes and myocytes was 78.33% and 74.17 at 1°C/min; 80% and %51.25 at 2°C/min; 60.83% and %51.25 at 0,5°C/min; 60.83% and 48.75% at vitrification. Metabolic activity of vitrified cells were lower than slow freezing groups. Results showed that different kind of cells have different tolerances to freezing rates. Cryopreservation protocols should be optimized according to the specific cell types.

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