

**ABSTRACT**

**VIABILITY TEST DEMINERALIZED FREEZE-DRIED BOVINE BONE  
XENOGRAFT ON RAT BONE MARROW MESSENCHYMAL STEM CELL  
(In Vitro Laboratory Experimental Research)**

**Background:** Increased use of bone graft in surgery, requires availability of bone graft material that is ready to use. To fulfill this, the development of bone graft is growing rapidly. One of the bone graft materials being developed is demineralized freeze-dried bovine bone xenograft (DFDBBX). DFDBBX is made of cow bone that has been chemically processed to remove mineral components, but still leaves collagen and non collagen proteins and growth factors. This component acts as an osteoinductor, BMP2. In order to determine whether material is toxic to certain cells, availability test is needed. **Objective:** To determine whether DFDBBX are toxic to rat bone marrow mesenchymal stem cells (rBM-MSC). **Methods:** rBM-MSC was divided into 3 groups, control, DFDBBX, BHA, which were subgroup into 2,5%, 5%, 10% of conditioned medium of the respective graft. The observation of cell viability was counted after 24, 48, 72 hours. The number of living cells is analyzed with MTT Assay. **Results:** DFDBBX conditioned medium concentration of 2.5%, 5% and 10% at 24 hours, 48 hours and 72 hours was not toxic to rBM-MSC, the longer observation the lower number of living cells. DFDBBX 10% concentrate on observation after 24 hours has the highest average percentage of living cells and can stimulate the proliferation of rBM-MSC.

**Keywords:** DFDBBX, BHA, rBM-MSC, MTT Assay