

## **HSP70 Expression on Osteogenic Cells Cultured on Titanium Discs and Polystyrene Tissue Culture**

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Heat Shock Protein (HSP) is expressed in cells either constitutively or inductively in response to variably stimuli. In the present study we investigated the possible induction in the expression of this protein by titanium and polystyrene tissue culture (PTC). Primary culture was obtained by enzymatic digestion of alveolar bone fragments and cultured in osteogenic medium until subconfluence. Subcultures were performed for 10 days in 24 well plastic plates and titanium surface. The gene expression level of HSP1L constitutive, HSP70 (HSPA1A and HSPA1B) inducible and alkaline phosphatase (ALP), used to confirm the osteoblastic phenotype, were determined by quantitative real-time PCR. The HSP70 protein expression was detected by Western blot analysis. Our results indicated that there was no difference in the constitutive (HSP1L) or inducible (HSPA1B) mRNA expression in cells grown on titanium or polystyrene tissue culture. Although a slight decrease in the HSPA1B mRNA was detected, it was not sufficient to affect the HSP70 protein content detected by Western blotting analysis. No significant change in HSP70 content was observed between cells cultured on titanium and on plastic surface. Since the HSP70 did not change significantly in both conditions, this amount might represent the constitutive form of HSP70 found in that condition of culture. Considering that titanium is one of the most widely biomaterial used for orthopaedic procedures, and for oral rehabilitation, dental and trauma surgery, we may suggest that the cells surface grow and osteointegration process are not affected by stress that can evoke inducible Hsp70.

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