

MUTAGENICITY EVALUATION OF PLASMA TREATED ON TITANIUM SURFACE

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Parallel to the biofunctionalisation of existing materials, innovation in biomaterials engineering has led to the specific design of titanium surface for implant applications. However, their biocompatibility and genotoxicity level must be assessed. Therefore, the aim of this study was to evaluate the mutagenic potential of differences titanium surfaces: untreated surface, plasma and resistive treated surface, through the AMES spot test. The biomaterial surface was tested on the *Salmonella typhimurium* strains TA 98 (frame-shift mutation detector strain) and TA 100 (point mutation detector strain). The results showed that none of the experimental titanium surfaces were mutagenic. This preliminary study suggests that plasma treated surface can be regarded as a biologically safe implant material with many promising clinical applications. However, these results urge the need for additional studies using the same strain with metabolic activation to verify its capacity to induce mutations of indirect form, as also the use of other strains capable to detect other types of mutations.

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