

DNA DAMAGE INDUCED FOR TITANIUM PLASMA TREATED SURFACE

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The interactions between cells and implant materials are determined by the surface structure and/or surface composition of material. In the past years, titanium and titanium alloys have proved their superiority over other implant materials in many clinical applications. Most of titanium particles biocompatibility has been tested. However the genotoxicity of titanium remains controversial. In this study *in vitro* genotoxicity activity of titanium surfaces was evaluated. The CHO-K1 (Chinese hamster ovary) cells was cultured in the presence of titanium plasma treated or untreated surface for 5 days, and their comparative genotoxicity levels were assessed using comet assay. The results revealed that both surfaces induced a significant increase in DNA breaks in CHO-K1 cells. This research indicates the both types of titanium surface are genotoxic. These cell cultures studies may provide information study on the behavior of biomaterials in the implant environment. Furthermore, additional studies are need to clarify these findings.

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