

## **In vitro toxicity and mutagenicity of CoCrMo and Ti6Al wear particles**

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Contact of wear particles with body fluids can result in widespread dissemination of extractable constituents from joint implants. The aim of this in vitro study is to clarify whether there is a mutagenic and/or carcinogenic risk from CoCrMo and Ti6Al wear particles. Particles of a representative size were produced by fretting; toxicity and mutagenicity were investigated using the salmonella/microsome test according to AMES and the V79-HGPRT Test (Chinese Hamster Fibroblasts). To obtain the greatest possible elution of all constituents the metallic wear particles were extracted with dimethylsulfoxide and water and the resulting eluates mixed together. Neither the bacterial assay nor the mammalian cell system after repeated test series under standardised conditions produced evidence of a toxic or mutagenic effect in the concentration range under study. It is therefore not to be expected that CoCrMo or Ti6Al alloys initiate carcinogenesis in the human organism.