

## O26. TOXICOLOGICAL CHARACTERIZATION OF TATTOO INKS AND ITS DECOMPOSITION PRODUCTS

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Tattooing has become a widespread kind of body modification in Western culture. About 15% of all people and every fourth under the age of 28 in Germany have at least one tattoo.

During tattooing, the ink is directly injected into the lower dermal skin layer, thereby enabling distribution of hazardous substances systemically throughout the body. For the soluble ingredients, an immediate distribution must be assumed. Translocation and/or decomposition of the insoluble pigments may occur over lifetime. Pigment decomposition is expected by both endogenous metabolism and/or sunlight exposure of the tattooed person.

In our previous studies, we showed the laser-induced breakdown of six tattoo pigments into various toxic or carcinogenic substances. To estimate the hazardous potential of known carcinogens among these degradation products, we investigated their toxicity towards skin cells *in vitro*. To this end, we applied the comet assay on NIH-3T3 fibroblasts, a model for dermal cells. General and oxidative DNA damage were detected by taking advantage of the higher test specificity upon application of human 8-hydroxyguanine DNA glycosylase (hOGG1). In addition, a modified comet assay applying the restriction enzymes *HpaII* and *MspI* will be used to evaluate human skin biopsies and 3D skin models for altered methylation patterns due to epigenetic changes caused by tattoo pigments.