IN VITRO
reconstructed human skin- and epidermal models as potent screening and research tools for Phototoxicity, Photoaging and Photoprotection

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Introduction

• Establishment of potent in vitro tools for the analysis of compound derived photoreactions in the skin
• Establishment of suitable in vitro techniques for analysing the efficacy of cosmeceutical products
• Future prospects on our research on suitable parameters for the in vitro characterisation of cosmeceuticals

Test system: Epidermal Skin Test-1000®; CellSystems, St. Katharinen, Germany

Example for photo protection: STOKO® UV 30 Complete attenuates the phototoxic effect of topical exposure to Clorpromazine (CPZ)

Results

• Phototoxicity of Clorpromazine to Epidermal Skin Test-1000® was attenuated by STOKO® UV 30 Complete
• UV irradiation of Epidermal Skin Test-1000® lead to a dose response in cell viability and LDH release.
• Exposure of in vitro reconstructed human epidermis induced a dose response in RNA content and in the expression of immune parameters like SKALP / ELAFIN and TNF-α

Conclusions

• Epidermal Skin Test-1000® is a potent screening tool for the characterisation of chemical induced hazards like phototoxicity
• In vitro reconstructed tissues have advantages when compared to simple cell culture methods because they match the situation in vivo (physiological route of exposure)
• Efficacy testing of products designed for photoprotection is possible and potent parameters to describe the efficacy of products designed for the skin care of UV exposed skin are provided by the use of in vitro reconstructed human epidermal models.