

Human skin model for research applications

Project Team

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Project Summary

As the first line of defense, the skin is regularly exposed to a variety of biological, physical and chemical insults. The development of a contact dermatitis can be the consequence of repetitive exposure to low molecular weight chemicals or other irritating agents, if exposure exceeds the individual threshold. A special form of contact dermatitis is the protein contact dermatitis (PCD), an allergic skin disease manifesting predominantly in an occupational environment and being associated with an unfavorable prognosis.

We investigate the molecular, environmental as well as constitutional factors contributing to epidermal sensitization and elicitation of PCD. Molecular components from occupational protein sources (e. g. plant-derived and animal-derived foods) responsible for the epidermal sensitization in PCD are being investigated. To differentiate the pathophysiology of IgE-mediated PCD in contrast to the hapten-mediated contact dermatitis a human ex vivo skin model and an experimental mouse model are being under investigation.