Stiftung zur Förderung
der Erforschung von
Ersatz- und
Ergänzungsmethoden
zur Einschränkung von
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Project

Development and Characterization of an In Vitro Skin Model of Atopic Dermatitis

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04/2013 – 03/2015

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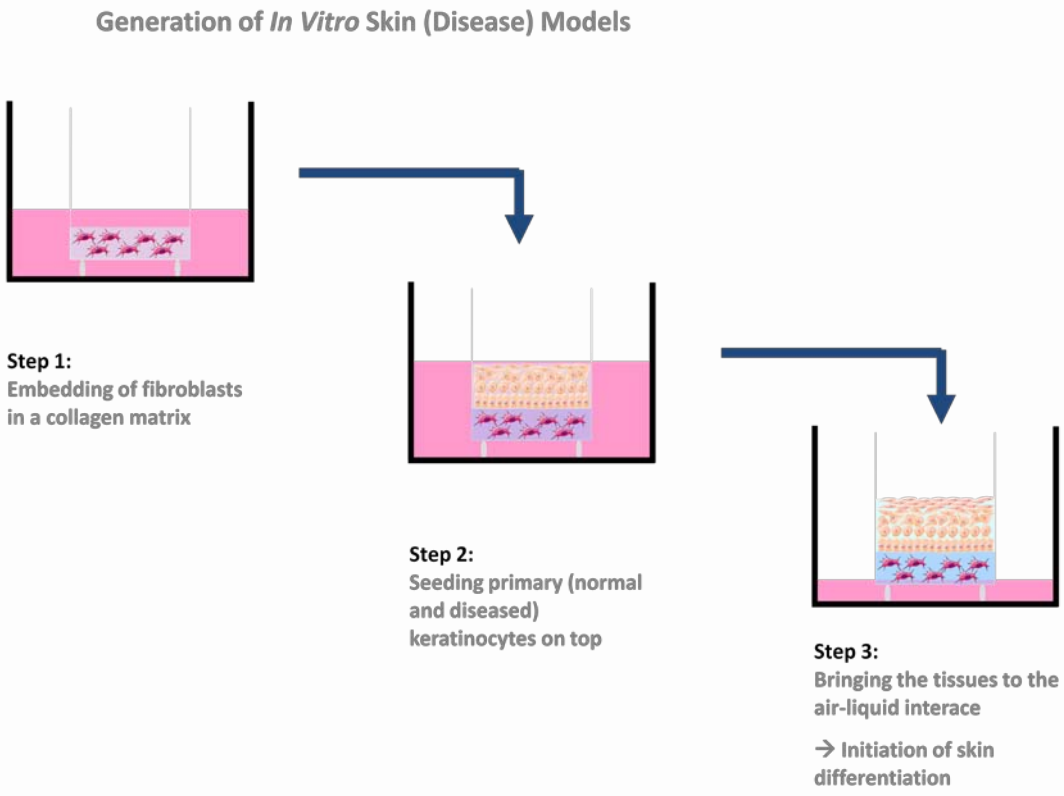
Development and Characterization of an In Vitro Skin Model of Atopic Dermatitis

Atopic dermatitis is a huge medical problem with increasing prevalence worldwide especially in industrialized countries. Currently, about 10-20 % of the children and 1-3 % of adults are affected. The pathophysiological processes of atopic dermatitis are not yet understood in full although it is a well-known fact that atopic dermatitis is based on a multifactorial pathogenesis. Loss-of-function mutations in the filaggrin gene (FLG) (occurring in about 20-50 % of the atopic dermatitis patients) are the major predisposing factor for the development of an atopy. Furthermore, immunological factors such as an overshooting Th2 immune response as well as environmental factors mainly contribute to the disease manifestation. The aim of this project is the development of an in vitro skin model of atopic dermatitis based on a filaggrin knock down and its thorough characterization. First, we aim for the development of an in vitro test matrix for the screening of new drug candidates for the treatment of atopic dermatitis. Secondly, the in vitro skin disease model will allow for fundamental and systematic investigations on the impact of single genes and other contributing factors on the skin barrier function.

The successful establishment of an in vitro disease model of atopic dermatitis allows the reduction and partially the replacement of animal studies which are currently the gold standard for the testing of new treatment options for atopic dermatitis and the basis for fundamental research on its pathogenesis.



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Duration

04/2013 – 03/2015