Propositions accompanying the doctoral thesis

The microbiome and the skin barrier in atopic dermatitis

Towards personalized treatment

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1. Atopic dermatitis (AD) patients are persistently colonized by the same *Staphylococcus (S.) aureus* strain on the skin and in the nasal cavity (*this thesis*).

2. A decrease, not eradication of *S. aureus* represents successful therapy in AD (*this thesis*)

3. Mutations in the filaggrin gene (*FLG)* have a minor impact on the skin microbiome in children with moderate to severe AD (*this thesis*)

4. The presence of a mutation in *FLG* is associated with higher Th22 in the general pediatric population, reflecting the immunological response to the altered skin barrier (*this thesis*)

5. Natural moisturizing factor measurement using Raman spectroscopy is a non-invasive biomarker to stratify AD patients based on *FLG* mutation status (*this thesis*)

6. The classification of microbial species as a commensal is dependent on its interaction state with the host (*based on Flowers et al. Cell Host Microbe 2020*)

7. Microbiome changes offer a 'canary in the coal mine' solution to predicting disease outcomes in AD (*based on Chng et al. Nature Microbiology 2016*)

8. Skin barrier dysfunction is a common trait in AD, implying that other factors besides *FLG* loss-of function mutations modulate skin barrier integrity as well (*based on Jakasa et al. 2011 JID*)

9. Treatments that restore the epidermal barrier function should lessen the need for topical and systemic immunosuppressive therapies in AD (*based on McGrath et al, trends in Molecular medicine 2008*)

10. Endotyping approach, including the assessment of epidermal, immunological and microbial biomarkers, should be used to enable personalized treatment

11. Not all those who wander are lost (*J.R.R. Tolkien*)