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)