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Final Report of the project

“Fighting *Staphylococcus aureus* infections at the mucosal surface in Job Syndrome”
funded by the for Job Research Foundation from beginning of 2019 to end of 2021

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The project “*Fighting Staphylococcus aureus* infections at the mucosal surface in Job Syndrome” (funding period 2019-2021) of Dr. Effner, Dr. Schwierzeck (now University of Münster), and Prof. Dr. Renner, School of Medicine at TU Munich, Germany focused on the pathogenicity of *S. aureus* in Job syndrome from a host and pathogen side.

By assessing how *S. aureus* and its specific virulence factors influence the course of disease by impaired host-pathogen interactions, they are elucidating the contribution of *S. aureus* to the severity of recurrent skin and lung infections in Job syndrome patients. Their aim is to find novel mechanisms to improve antimicrobial defense and patients’ quality of life.

From the pathogen-perspective they investigated by whole genome sequencing in patient-specific bacterial isolates whether the underlying immune deficiency selects for specific *S. aureus* strains. From the host-perspective they infected patient-specific cell models with *S. aureus* and identified metabolic pathways, which they plan to investigate in the future to enhance host strategies improving *S. aureus* defense.

With their project they shed light on the *S. aureus* carrier profile of Job syndrome patients and improved understanding of host-pathogen dynamics to solve important questions for the clinical management of Job syndrome.

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