DKMS Stiftung Leben Spenden

Project Summary

John Hansen Research Grant 2025

Harnessing the potential of gut microbiome for improving the outcome of CART-cell therapy against hematological malignancies

Abdur Rehman, PhD

The University of Texas MD Anderson Cancer Center, Houston, USA

Specific species of commensal microbiota can directly impact outcomes of various immunotherapies, including immune checkpoint blockade, hematopoietic stem cell transplantation, and more recently, chimeric antigen receptor T-cell (CAR-T) therapy. While these observations highlight the importance of the microbiota in cancer treatments, we still have a limited understanding of how individual commensal species can affect CAR-T cell therapy outcomes. The primary focus of my project is to identify and characterize specific microbial species, along with uncovering the key factors or pathways they influence, that may contribute to enhancing the effectiveness of CAR-T therapy against hematological malignancies. This research will provide fundamental insights into the interactions between the host and microbiota during cancer immunotherapy, which could ultimately lead to the development of innovative microbiome-based strategies to enhance CAR-T therapy in clinical settings.