



EBERHARD KARLS  
UNIVERSITÄT  
TÜBINGEN



## CSC-Tübingen PhD Scholarship Program

2025/2026 application round: prospective PhD positions at the University of Tübingen

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Faculty: Faculty of Medicine

Institute / Section / Subject: Internal Med IV/ Institute of Diabetes Research and Metabolic Disease

Supervising Professor(s): Prof. Dr. med. Andreas Birkenfeld, Dr Gencer Sancar

About the Supervisor(s): Prof. Dr. med. Andreas Birkenfeld is the director of Clinic for Diabetology, Endocrinology and Nephrology at University Clinic Tübingen, and Dr. Gencer Sancar is Group Leader focusing on the role of adipose tissue in insulin resistance and type 2 diabetes. Our research group is interested in molecular and physiological pathways involved in insulin resistance and type 2 diabetes. We study different plasma membrane transporters as targets for therapeutic interventions in type-2 diabetes, obesity, and associated metabolic comorbidities. We are particularly curious about how liver and adipose tissue communicate in the context of metabolic disease processes. Further information on the lab can be found at: <https://www.helmholtz-munich.de/en/idm>

<https://www.helmholtz-munich.de/en/idm/pi/gencer-sancar>

Specification/Project title: Decoding the Crosstalk Between Saturated and Unsaturated Fatty Acids in Adipocyte Insulin Resistance

Topic Description: Chronic exposure to saturated free fatty acids (FFAs) promotes endoplasmic reticulum stress, inflammation, and oxidative stress, which converge to drive adipocyte insulin resistance. In contrast, unsaturated FFAs exert protective effects by mitigating these stress responses and preventing insulin resistance. This project will dissect the molecular pathways linking saturated fats to insulin resistance and their modulation by unsaturated fats. We will employ integrated lipidomics and metabolomics in primary human adipocytes to define lipidomic and metabolic signatures of insulin resistance and identify candidate protective mechanisms. Selected pathways will be further investigated in vivo using mouse models, providing mechanistic insights with translational relevance for type 2 diabetes.

Intended Degree: PhD

Type of the PhD Study: Full-time

Required Degrees and Qualifications: MSc in Biology or related discipline (e.g. Biochemistry, Molecular Biology, Biomedical Engineering)

Language Requirements: Proof of proficiency in English on at least C1 level and fluency in speaking.

Notes: Looking for highly motivated candidates interested in metabolism and type-2 diabetes. The candidate could expect a highly supportive environment for his/her scientific development.