



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



CSC-Tübingen PhD Scholarship Program

2026/2027 application round: prospective PhD positions at the University of Tübingen

Faculty: Medicine

Institute / Section / Subject: Department of Urology, Experimental Uro-oncology, Translational Uro-oncology

Supervising Professor(s): PD Dr. rer. nat. Maria Luisa Barcena

About the Supervisor(s): PD Dr. Maria Luisa Barcena is an experienced translational researcher with expertise in cell and molecular biology, tumor immunology, mitochondrial biology, and experimental oncology. Her scientific work combines laboratory-based mechanistic research with clinically integrated translational platforms and multidisciplinary collaboration. Over the past years, she has established and coordinated uro-oncological research structures that connect patient material, clinical annotation, biobanking, liquid-biopsy sampling, and patient-derived experimental models. Her work is supported by competitive funding as principal investigator and co-principal investigator, including projects in bladder cancer, penile cancer, immunometabolism, mitochondrial biology, and medical-data platforms. Her long-term objective is to build functional precision-oncology programs that translate clinically relevant questions into robust patient-derived models, integrate tumor, stromal, immune, metabolic, and biomechanical data, and ultimately support biomarker-guided and individualized therapeutic strategies.

Specification/Project title: Investigation of the effects of pembrolizumab and cemiplimab on mitochondrial metabolic reprogramming in penile squamous cell carcinoma

Topic Description: Penile squamous cell carcinoma is a rare but aggressive uro-oncological malignancy with limited treatment options in advanced disease. This research topic focuses on the interplay between tumor metabolism, the immune microenvironment, and response to immunotherapy. In particular, it investigates how macrophage plasticity, mitochondrial function, and immunogenic cell death contribute to immune escape, metastatic progression, and treatment resistance. Integrating patient-derived tumor models with molecular, functional, proteomic, and phosphoproteomic approaches may help identify clinically relevant biomarkers and therapeutic vulnerabilities, thereby supporting more personalized treatment strategies for patients with penile cancer.

Intended Degree: PhD in Experimental Medicine

Type of the PhD Study: Full-time (complete doctoral studies at the University of Tübingen)

Required Degrees and Qualifications: Expertise in immunometabolism

Language Requirements: English C1 (IELTS 7.0)

Notes: