



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN



CSC-Tübingen PhD Scholarship Program

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

Faculty:	Medical Faculty of Tübingen
Institute / Section / Subject:	Prof. Alexander-Friedrich is the Head of the Research Laboratory of the Dept. of Oral and Maxillofacial Surgery (University Hospital Tübingen).
Supervising Professor(s):	Prof. Dr. rer. nat. Dorothea Alexander-Friedrich
About the Supervisor(s):	Prof. Alexander-Friedrich is a successful scientist in the field of regenerative medicine with the focus on bone tissue engineering. She is teaching and supervising students to conduct successfully their bachelor, master and doctoral theses in the field of experimental medicine.
Specification:	In the present work, the relationship between stem cell senescence and the initiation of bisphosphonate-induced necrosis of the jaw will be investigated. The project title will be: "Effects of bisphosphonates/radiation on the initiation of cell senescence in mesenchymal osteoprogenitor cells, osteoclastogenic precursors and mature osteoclasts".
Topic Description:	In the present work, the involvement of stem cell senescence in the context of bisphosphonate-related osteonecrosis of the jaw (BRONJ) will be analyzed. Bisphosphonates are widely used in the treatment of bone metastasis of cancer and osteoporosis. BRONJ is defined as exposed bone in the maxillofacial region which persists for more than 8 weeks. The induction of cell senescence by bisphosphonates in osteoprogenitors, osteoclastogenic precursors and mature osteoclasts in the pathogenesis of the disease will be deciphered by detailed in vitro studies. On the other hand, the efficacy of different therapeutic tools for the reduction of senescence to be established in this project, will be tested at a later stage by using a BRONJ animal model.
Degree:	Dr. med. dent, Dr. med. or PhD in Experimental Medicine
Required Degrees:	Master of Stomatology or Master of Medicine

Language Requirements:

English (IELTS 6.5), Knowledge of the German language is preferable.

Notes:

The student should bring enthusiasm for fascinating scientific research questions, she/he should be a friendly and cheerful person and a very good team player. She/he should not be discouraged quickly and needs to be resilient. The student should not have any concerns to perform in vivo experiments with rats.