

Collaborations Within the DK

R. Breinbauer

Chemical synthesis and bioactivity of the pyrrolobenzodiazepine tilivalline; functional tests for phenazine inhibitors in bacterial growth and virulence.

K. Gruber

Computational modeling of recognition domains in secreted proteins.

S.-D. Kohlwein

Microscopy imaging of bacterial-host interactions, bacterial adherence, protein localization, bacteriophage-pilus adsorption and dynamics.

P. Macheroux

ITC detection of protein-ligand binding for secretion system ATPases, molecular genetics of the bioluminescence factor LuxF of proteobacteria.

J.Reidl and S. Schild

Extensive collaboration in research devoted to bacterial pathogen – host interactions, animal models of infection, microbial genetics, bacterial biofilms, and vaccine development.

G. Straganz

Biochemical characterization of non ribosomal peptide synthases involved in bacterial toxin production.

K. Zangger

Protein-protein interaction measurements via NMR.

Collaborating Research Groups Where PhD Students Could Perform Their Research Stay Abroad

Gabriel Waksman

Institute of Structural and Molecular Biology, University College, London, UK; The Waksman laboratory is world leading in cryo-electron microscopy and X-ray crystallography resolution of membrane spanning bacterial secretion machinery. Ongoing collaboration for structural analyses of Type IV coupling protein – secretion protein complexes.

Hanno Tröger

Institute of Gastroenterology, Charité, Berlin, DE; Ongoing collaboration investigating the pathogenicity of *Klebsiella oxytoca* and the bioactivity of its toxin tillivaline in Ussing chamber models of the intestinal epithelial barrier. These studies will measure the impact of bacterium

and toxin on epithelial resistance, paracellular permeability, and tight junction integrity and structure to define the mechanisms of epithelial dysfunction resulting from *K. oxytoca* infection.

Peter J. Christie

Univ. of Texas-Houston Medical School, Houston, TX, USA; Cooperative investigation of the intermolecular interactions of actin-like plasmid partitioning proteins and bacterial type IV secretion machinery, intracellular localization of secretion substrates and membrane receptors. Pioneered unique technology for tracing macromolecular substrate pathway through secretion channels.

Joel F. Schildbach

Johns Hopkins University, Baltimore, MD, USA; Leading expert in biophysical measurements of DNA binding activities of IncF conjugation proteins, crystal structure of F Tral relaxase domain.

Fernando de la Cruz

Universidad de Cantabria, Santander, Spain; Long-standing cooperation with repeated exchange of personnel for research, joint funding and joint publications. Expertise in biochemistry and structural biology of conjugative IncW system. Atomic structure of TraD analog, TrwB, and TrwC-DNA co-crystals.