

PhD Position – Studying bacterial infection and the response to antibiotics in an organoid model

Research Group Christoph Dehio

The Biozentrum of the University of Basel (<https://www.biozentrum.unibas.ch>) is one of the leading life sciences research institutes in the world. It consists of 30 groups and 500 employees that investigate how molecules and cells create life, spanning the scales from atoms to organisms and communities.

The National Center of Competence in Research (NCCR) AntiResist is a Swiss-wide research consortium funded by the Swiss National Science Foundation (SNSF). AntiResist aims to tackle the global spread of antibiotic resistance, a problem of strategic and international importance. To reach this goal, AntiResist has assembled 29 expert groups in the fields of clinical research, infection biology, chemistry, computation, engineering and pharmacology. NCCR AntiResist aims to train the next generation of researchers and clinicians in infectious diseases using novel interdisciplinary approaches.

The Project

Urinary tract infections (UTIs) are leading cause of antibiotic prescription in the world. Uropathogenic *Escherichia coli* (UPEC) are the primary source of UTIs. Conventional antibiotics used to treat UPEC infections lead to resistance. To study the basis of antibiotic resilience in UTI and to develop innovative anti-bacterial strategies, there is an urgent need for new technologies that enable the study of UTIs in a patient-like setting. The proposed PhD project in the Dehio group aims at contributing to the establishment and validation of an *in vitro* human urinary bladder organoid model and its use to study UPEC-host interaction and the bacterial response to antibiotic treatment. The candidate PhD student will be embedded into a small research team (Research associate and Postdoc) within our group and will be engaged in several collaborations within the NCCR AntiResist network.

Your Profile

We are looking for a highly motivated and talented PhD student. A Master degree in biology, biochemistry, bioengineering, or a similar discipline is required. The optimal candidate has basic knowledge in microscopy, cell biology and infection biology as well as excellent communication and teamwork skills.

We offer

The PhD position is part of a structured PhD program in the Biozentrum and funded for up to 4 years. The Dehio Lab offers a highly interactive, interdisciplinary and

international team of enthusiastic scientists. The mission of our group is to understand molecular mechanisms of bacterial infection and resilience to antibiotics with the goal to develop novel anti-infective strategies. Our group spans expertise on cutting-edge techniques in the fields of molecular biology, microbiology, cell biology and animal experimentation. Moreover, the Biozentrum offers excellent internal support from various state-of-the-art core facilities with expert staff. In the frame of the wider NCCR AntiResist network (<https://www.nccr-antiresist.ch/en/>) we collaborate closely with researchers with complementary expertise, in particular with clinicians, bioengineers, chemists and computational scientists. In this interdisciplinary framework we are able to study bacterial infection and the response to antibiotics by an integrated approach “from bedside to bench and back again”.

Basel is an international city with people from 150 nations. Located on the border where Switzerland, Germany, and France meet, Basel is home for a large number of institutions for biomedical research, with numerous possibilities for training, networking, and career development. Basel provides a high standard of living and a rich and varied cultural atmosphere.

Application

Please apply online: <https://biped2.biozentrum.unibas.ch/apply/phd-bacterial-infection-dehio>

The application should include a brief personal statement, explaining how your qualifications and experience relate to the role, together with a full, up-to-date CV and at least two reference letters. Review of applications will start immediately. Please note that only online applications will be considered. Shortlisted candidates will be informed as soon as possible about the interview procedure.

For any informal enquiries, please contact Dr. Isabel Sorg: Isabel.sorg@unibas.ch or Dr. Mehmet Girgin: mehmet.girgin@unibas.ch

We look forward to hearing from you!