

Open position for a PhD student researcher within the

**Collaborative Research Centre (CRC) 1371 Microbiome Signatures
Functional Relevance in the Digestive Tract**

**in decoding preterm infections and
advancing phage therapy for preterm infant health (m/f/d)**

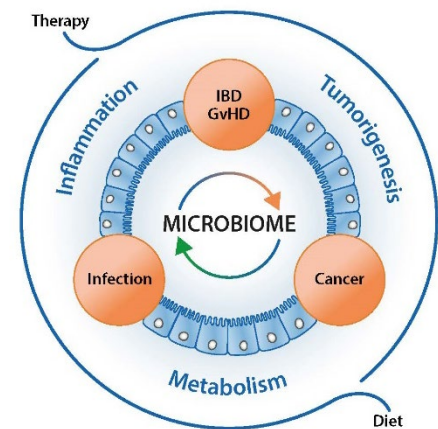
at

Infection Pathogenesis

School of Life Sciences

Technical University of Munich (Weihenstephan)

starting 01.05.2023 (may also be able to start later)



The gut microbiome plays a fundamental role in health and disease. CRC 1371 (Speaker Prof. Dr. Dirk Haller) focuses on the digestive tract and proposes an interdisciplinary approach to elucidate the functional relevance of microbiome signatures in the context of inflammation and cancer.

Within CRC 1371, the Integrated Research Training School (IRTG) provides a qualification program for PhD students containing excellent multidisciplinary training with tailor-made subject-based and soft skills courses, annual retreats, summer school, and a supervision concept. More information on the IRTG, the research projects and principal investigators are available on the [CRC 1371 website](#).

Job description

We are looking for a creative and motivated PhD candidate to join a dynamic, multi-disciplinary research team investigating novel therapeutic interventions for infections of preterm infants. This position is within the Chair of Infection Pathogenesis at the Technical University of Munich (TUM), and will be in close collaboration with Prof Li Deng (TUM/ Helmholtz), who have a focus on phage therapy.

Background: Initial colonisation of the gut by pioneer bacterial species is the first key step for host well-being. The process of initial gut microbiota colonisation in preterm babies is radically interrupted due to a variety of factors including mode of delivery and antibiotics. This disturbed colonisation of premature infants appears pivotal to the development of a number of diseases, including necrotising enterocolitis (NEC), which is linked to overgrowth of opportunistic antibiotic resistant pathogens. One of the most promising human-relevant models is preterm piglets, which develop NEC with identical clinical features and relevance, providing an ideal platform for testing critically needed new strategies against NEC pathogens.

Working with the Deng group, bacteriophages -bacterial viruses- nature's most prevalent bacterial predators, represent an attractive treatment option and will be tested for their ability to kill NEC-related pathogens.

The goal of this PhD studentship is to uncover the phage - NEC pathogen interplay in a variety of *in vitro* and *in vivo* models and to study the interplay of phages with the immature mucosal and systemic immune system of preterm piglets. The PhD student will test different phage therapy strategies in preterm piglets to fight against NEC-related pathogens and be trained in a variety of innovative methods covering cell culture techniques, flow cytometry, histology, microbial culturing, next generation sequencing and bioinformatics analysis.

Thus, this PhD project represents an exciting and multi-disciplinary environment for breaking new ground in the fight against antibiotic resistant bacteria that cause serious illness in fragile preterm infants.

Required qualification

Candidates must hold a Master degree / Approbation (or equivalent) in a topic related to veterinary/medical/biological/biomedical sciences, and have a good command of the English language (oral and written).

Salary and duration

Payment is according to the wage agreement of the civil service TV-L, 65% of E13 for PhD student positions and 100% of E13 for Postdoc positions. Please note that there are no additional postgraduate degree fees required for international candidates.

Application deadline

Applications will be considered until position is filled.

Contact person

Prof. Dr. Friederike Ebner / friederike.ebner@tum.de

Application

Applicants are asked to send one pdf file to the contact person. The file includes cover letter, curriculum vitae, copies of academic degrees and transcripts of records, contact information for at least one letter of recommendation, list of publications (doi or link, do not attach them to the pdf).

As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. Preference will be given to disabled candidates with essentially the same qualifications.

Data Protection Information:

When you apply for a position with the Technical University of Munich (TUM), you are submitting personal information. With regard to personal information, please take note of the [Datenschutzhinweise gemäß Art. 13 Datenschutz-Grundverordnung \(DSGVO\) zur Erhebung und Verarbeitung von personenbezogenen Daten im Rahmen Ihrer Bewerbung.](#) (data protection information on collecting and processing personal data contained in your application in accordance with Art. 13 of the General Data Protection Regulation (GDPR)). By submitting your application, you confirm that you have acknowledged the above data protection information of TUM.)