



HEIDELBERG
UNIVERSITY
HOSPITAL

Recruiting: Post-doctoral researcher and PhD student for BMGF funded project

Start date: 1st December 2022

Deadline for application: 25th October 2022

Supervised by: Dr Victoria Ingham (<https://www.klinikum.uni-heidelberg.de/zentrum-fuer-infektiologie/parasitology-unit/research/ingham-lab>)

We are looking to recruit two positions for a project determining the impact of insecticides on parasite development and the interaction of these insecticides in *Anopheles* mosquitoes. The appointees will join the Parasitology Unit in the Centre for Infectious Diseases and be affiliated with the Centre for Molecular Biology (ZMBH). We will also work closely with industrial partners through regular meetings with BASF.

Project One: Impact of Chlorfenapyr on Plasmodium infectivity (co-supervised by Prof Friedrich Frischknecht)

Within this objective the candidate will use a variety of *in vivo* and *in vitro* parasite assays to determine whether exposure to insecticides used on IG2 bed nets impacts motility and hence transmissibility of the parasite. Due to adaptability the model organism *P. berghei* will be used throughout.

Key responsibilities are (but not limited to):

- *P. berghei* infections, including the associated mouse-infection work
- Rearing and dissection of *Anopheles* mosquitoes
- Working with all stages of the mosquito-stage parasite life cycle both *in vitro* and *in vivo*
- Transmission experiments – bite back and hepatocyte invasion assays
- Relevant fluorescence-based microscopy

The Candidate:

- MSc or equivalent in a biological field
- Interest in entomology, parasitology and malaria intervention tools
- Demonstratable experience in a laboratory setting
- Effective English communication both written and verbal
- Ability to work in a team-based environment

Project Two: Interactions between pyrethroids and chlorfenapyr (co-supervised by Prof Nora Vögtle)

Within this objective the candidate will use a variety of techniques to determine interactions between pyrethroid insecticides and chlorfenapyr within the *Anopheles* vector, with a particular focus on changes in respiration-linked gene expression and mitochondrial biology.

Key responsibilities are (but not limited to):

- RNAseq time course generation and analysis
- Insecticide bioassays
- dsRNA-mediated knockdown and phenotypic characterisation of candidate genes in mosquitoes
- Setting up a cell-line system for resistant *Anopheles* mosquitoes
- Mitochondrial isolation, respiration assays (Seahorse analyses), fluorescent imaging and protein work
- Mass spec-proteomic generation and analysis

The Candidate:

- PhD in a molecular biology or bioinformatics field
- Relevant experience in working with two of (i) cell culture, (ii) transcriptomics analysis or (iii) molecular biology
- Relevant experience- or keen interest- in entomology and malaria control
- Effective English communication, both written and verbal and experience working both in a solo setting and as part of a team
- Ability to problem solve and design experiments. Must be able to work independently.

Benefits:

Pay in line with the TVL-E13 scale for the post-doctoral researcher and 65% TVL-E13 for PhD

30 days holiday

Flexible working hours

Please contact: Victoria.ingham@uni-heidelberg.de with any questions.

To apply for the post please send a cover letter and CV to the same address and state which post you are interested in.

There is scope for switching the post-doctoral and PhD posts in a candidate dependent manner. For a PhD in project two the candidate MUST have an MSc in a bioinformatics-related discipline. Please contact me to discuss if needed.