



## Postdoctoral Position in the Gerold lab

The research group “Molecular and Clinical Infection Biology“ at the Research Center for Emerging Infections and Zoonoses & the Department of Biochemistry, University of Veterinary Medicine Hannover, Germany, is recruiting a research associate (postdoc) on a 3-year position in virology to pursue a project within the One Health sector. The project aims at investigating enveloped zoonotic virus interactions with host cells, identify host factors and analyze their contribution to tissue tropism.

### Research Topic

Our group focuses on the study of zoonotic enveloped viruses including mosquito-borne viruses. We use state-of-the-art interaction proteomics methods in conjunction with virology and cell biology techniques to characterize host factors in virus transmission and deduce antiviral strategies and principles of virus tropism.

### Your role

You will be responsible for carrying out research in the Gerold research group ([tiho-hannover.de/en/group-gerold](https://tiho-hannover.de/en/group-gerold); [GeroldLab@Twitter](https://twitter.com/GeroldLab)) in close collaboration with local and international partners. The project aims at identifying and characterizing critical host factors of enveloped zoonotic viruses. Specifically, ligand-based receptor capture protocols and co-immunoprecipitation methods in conjunction with mass spectrometry-based proteomics will be used for host target identification. You will further validate and characterize identified host factors by RNA interference, CRISPR/Cas9 technology, and pharmacological perturbation in conjunction with cell culture assays. Ultimately, the contribution of the identified host factors to tissue tropism of arthritis- or encephalitis-causing viruses will be assessed.

To achieve the project aims, you will work closely with other team members and prepare samples for mass spectrometry-based receptor candidate identification by label free quantification. The design and optimization of these methods as well as data analysis will be done in the Gerold lab. To analyze different steps of the virus life cycle, you will use a panel of reporter viruses and a range of virological assay systems.

### Responsibilities

- Develop and conduct assays to evaluate host protein networks during virus infection.
- Perform statistical calculations on the mass spectrometric data sets and perform downstream bioinformatic analyses including pathway and enrichment analyses.
- Silence candidate proteins in human cell lines by RNA interference and monitor virus susceptibility.
- Generate CRISPR/Cas9 knockout cells of host factors and perform functional assays.
- Test host factor targeting agents for their antiviral potential in *ex vivo* models.
- Guide a technician responsible for virus stock preparation and titration.
- Participate and contribute to scientific group meetings.
- Contribute as appropriate to the publication of research findings.
- Participate in training and supervision of scientists and research students.
- Comply with the University's Equal Opportunities and Data Protection policies.

### Selection criteria

#### Essential

- PhD in infection biology, biochemistry, molecular biology, or cell biology; degree completed no more than 5 years ago.
- Excellent written and oral English communication skills.
- Significant experience in mammalian cell culture and transfection.



- Relevant experience in molecular cloning and ectopic protein expression.
- Interest in protein biochemistry of virus-host interactions.
- Ability to work as part of a team as well as independently.
- Ability to deliver results to required standard and schedule.
- Ability to organize and prioritize own work with minimal supervision.

#### **Desirable**

- Previous practical experience with sample preparation for mass spectrometry.
- Experience in MS data processing and R programming.
- Experience in virology in BSL2 and BSL3 environments.

#### **Research environment**

We are an international team based at the Research Center for Emerging Infections and Zoonoses. Our group has access to state-of-the-art equipment and techniques for cell culture work, virology research and mass spectrometry-based proteomics. We offer an international, stimulating, and collaborative research environment, in which your scientific career development is fostered.

#### **Position summary**

Full-time 3 years with full salary.

#### **Application**

Please apply until July 31<sup>st</sup>, 2021 at

[Nawaphat.Wanphen@tiho-hannover.de](mailto:Nawaphat.Wanphen@tiho-hannover.de)

with the following documents:

1. Cover letter highlighting your qualification and motivation
2. CV including publication list
3. Copy of PhD certificate
4. Contact information of 2-3 references

For questions, please contact:

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