

PhD Researcher Position

Czodrowski Lab @ University of Mainz, Germany

Project: Identification of new small molecule inhibitors for the aspartic protease endothiapepsin (Preferred Start: January 2027)

Web: www.czodrowskilab.org

About the Czodrowski Lab

We combine structural biology, machine learning, and biophysical methods to explore novel areas of biology. Our research focuses on the drug discovery aspects of chemical biology to identify molecules for unmet medical needs. In this context, the aspartic protease endothiapepsin serves as a blueprint to customize and integrate structural biology approaches (e.g., ITC, STD NMR, X-ray diffraction, switchSENSE, and FRET) together with AI-driven approaches, aiming to unravel the underlying principles of protein-ligand interactions.

Project Description

The aspartic protease endothiapepsin exhibits significant structural similarity to the pharmaceutically relevant aspartic proteases HIV protease and beta-secretase. In previous studies, we successfully deciphered the proton transfer in a peptide complexing endothiapepsin [1]. In this PhD project, novel yet structurally related inhibitors will be identified virtually and verified experimentally. A particular focus will be placed on the proton transfer occurring upon the formation of the protein-ligand complex, as previously demonstrated for a kinase-inhibitor complex [2].

Expected Candidate Profile

- Highly motivated individual with a solid background in structural biology and biophysical methods.
- Capable of working autonomously with a strong sense of personal responsibility, initiative, and an independent work ethic.
- Fluent in English; knowledge of German is considered a strong bonus.
- Dedication to teaching and mentoring undergraduate students.

What We Offer

- Salary & Benefits: A 3-year position compensated according to the German salary scale (TV-L E13, 65%) including full social benefits.
- Facilities: State-of-the-art research facilities and excellently equipped laboratories.
- Network: An inspiring, interdisciplinary environment that offers extensive local, national, and international collaboration opportunities.
- Development: Comprehensive professional growth through dedicated support for expanding your skillset beyond your core project.

How to Apply

Please send your full application (to czodpaul@uni-mainz.de) as a single PDF document with the subject line "PhD ET". The application must contain:

- A letter of motivation focusing on proposed PhD project
- A curriculum vitae (CV).
- A two-page summary of your Master's thesis (including a graphical table of contents / TOC).
- Transcripts of records from your BSc and MSc programs.
- Contact details of two references (name, contact information, and preferably reference letters).

Further Reading

[1] H. Vatheuer, O. Palomino-Hernández, J. Müller, P. Galonska, S. Glinca, P. Czodrowski, ChemMedChem 2025, 20, e202400953. DOI: 10.1002/cmdc.202400953

[2] H. Vatheuer, J. Paulus, L. Johannknecht, G. Keller, R. M. Ziora, L. S. Stelzl, P. Czodrowski, ChemMedChem 2025, 20, e202500244. DOI: 10.1002/cmdc.202500244