

## PhD Student Position available at IMB Mainz, Germany



### Investigating the nuclear actin cytoskeleton in DNA repair

The [Wollscheid group](#), which is hosted in the [Ulrich lab](#) at the Institute of Molecular Biology (IMB) Mainz, Germany, is looking for a PhD student interested in exploring the nuclear functions of the actin cytoskeleton in the context of genome stability with a strong focus on DNA repair processes.

The actin cytoskeleton fulfills essential functions in the context of cell migration, cell shape, mechanical signal transduction and many other aspects of cell biology. Despite the huge knowledge we acquired on cytoplasmic actin, there is very little evidence for the existence and function of F-actin inside the nucleus. Only recently, based on technological advances, nuclear actin filaments have been observed and characterized – mainly in the context of key genome stability pathways such as DNA repair and the response to DNA replication stress.

This PhD project aims to investigate the role of myosin VI in DNA double-strand break (DSB) repair, particularly its interaction with nuclear F-actin during homologous recombination. While myosins I and V facilitate DSB movement in *Drosophila*, little is known about their role in human cells. Preliminary data suggest myosin VI is involved in DNA repair, prompting key questions about its mechanistic contributions and potential interactions with other cytoskeletal factors. The project will utilize advanced cell biology techniques, including CRISPR/Cas9, fluorescence microscopy, flow cytometry, and specialized DNA repair assays, to explore these molecular pathways.

We are looking for motivated team players with a strong background in molecular or cell biology, biochemistry or a related field and excellent communication skills in English.

We offer a fully funded PhD student position within IMB's International PhD Programme ([IPP](#)) in a stimulating, international research environment with access to state-of-the-art infrastructure and Core Facilities.

#### How to apply

Informal enquiries and full applications should be sent to Dr. Hans-Peter Wollscheid ([h.wollscheid@imb-mainz.de](mailto:h.wollscheid@imb-mainz.de)). Full applications should include a brief motivation letter, CV and the names and e-mail addresses of two references.

#### Publications relevant to this project

Shi J, Hauschulte K, Mikicic I, Maharjan S, Arz V, Strauch T, Heidelberger JB, Schaefer JV, Dreier B, Plückthun A, Beli P, Ulrich HD<sup>#</sup> and **Wollscheid HP<sup>#</sup>** (2023) **Nuclear myosin VI maintains replication fork stability**. *Nat Commun*, 14:3787 (<sup>#</sup>indicates joint correspondence) [Link](#)

Wollscheid HP<sup>#</sup>, Ulrich HD<sup>#</sup> (2023) **Chromatin meets the cytoskeleton: the importance of nuclear actin dynamics and associated motors for genome stability**. *DNA Repair (Amst)*. 31:103571. (<sup>#</sup>indicates joint correspondence) [Link](#)