

Institute for Genetics and Cologne Excellence Cluster on Cellular Stress Responses in Aging-Associated Diseases (CECAD), University of Cologne, Germany

Positions available for postdocs and graduate students

Protein degradation in development and aging

The main interest of the laboratory is based on developmental processes in multicellular organisms that are governed by *ubiquitin-mediated proteolysis*. Besides the already known *E1*, *E2*, and *E3* enzymes required for *ubiquitin-conjugation*, additional modulators involved in substrate recruitment and *ubiquitin-chain assembly* have been identified. Current research addresses the molecular mechanism of *polyubiquitin chain assembly* on substrate proteins in physiologically relevant pathways. In addition to *myofibre differentiation* and *muscle maintenance* implicated in *protein aggregation* diseases, the lab is interested in certain aspects of *DNA repair/replication* which are linked to aging (www.genetik.uni-koeln.de/groups/Hoppe).

Currently, our laboratory joins the Cologne Excellence Cluster on Cellular Stress Responses in Aging-associated Diseases (CECAD), which will be the unifying driving force bringing together researchers and clinicians at the University of Cologne with researchers at the new Max Planck Institute for Biology of Aging in a unique research venture to advance understanding in this field.

Since beginning of this year the lab is supported by the EMBO Young Investigator Programme [www.embo.org/yip], which makes it possible to participate at EMBO courses and infrastructure.

Beside creativity and strong motivation we expect good communication skills and the ability for teamwork. The successful applicant will join an enthusiastic and collaborative group where a multidisciplinary approach is pursued. To apply, please forward curriculum vitae, bibliography, and the names and addresses of referees to: Prof. Thorsten Hoppe, Institute for Genetics and Cologne Excellence Cluster on Cellular Stress Responses in Aging-Associated Diseases (CECAD), University of Cologne, 50674 Cologne, Germany, thorsten.hoppe@uni-koeln.de

Selected Literature:

Cell cycle progression requires the CDC-48^{UFD-1/NPL-4} complex for efficient DNA replication. Mouysset J., Deichsel A., Moser S., Hoege C., Hyman A.A., Gartner A., and Hoppe T. (2008). *Proc. Natl. Acad. Sci.* 105, 12879-84.

Protein quality control gets muscle into shape. Kim J., Löwe T., and Hoppe T. (2008). *Trends Cell Biol.* 18, 264-72.

The ubiquitin-selective chaperone CDC-48/p97 links myosin assembly to human myopathy. Janiesch P.C., Kim J., Mouysset J., Barikbin R., Lochmüller H., Cassata G., Krause S., and Hoppe T. (2007). *Nat. Cell Biol.* 4, 379-90.

The UNC-45 Chaperone Mediates Sarcomere Assembly through Myosin Degradation in *C. elegans*. Landsverk M.L., Hutagalung A.H., Li S., Najafov A., Hoppe T., Barral J.M., and Epstein H.F. (2007). *J. Cell Biol.* 2, 205-10.

Multiubiquitylation by E4 enzymes: one size doesn't fit all. Hoppe T. (2005). *Trends Biochem. Sci.* 30, 183-187.

Regulation of the Myosin-Directed Chaperone UNC-45 by a Novel E3/E4-Multiubiquitylation Complex in *C. elegans*. Hoppe T., Cassata G., Barral J.M., Springer W., Hutagalung A.H., Epstein H.F., and Baumeister R. (2004). *Cell* 118, 337-49.