

PhD STUDENT POSITION AVAILABLE
(65% German TV-L E13, m/f, starting January 2019)
Hoppe Laboratory
Protein Homeostasis Mechanisms in Aging & Disease
CECAD-Cluster of Excellence in Aging Research, University of Cologne

Institution information: CECAD Cologne Cluster of Excellence: Cellular Stress Responses in Aging-Associated Diseases, CECAD Research Center, University of Cologne, Joseph-Stelzmann-Str. 26, D-50931 Cologne, Germany

Location: Cologne is a vibrant city with a highly international academic research environment. CECAD forms a focal point of ageing research in Europe 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.

Background: Protein homeostasis (proteostasis) is achieved via conserved quality control pathways that support the maintenance of correctly folded proteins. Unfortunately, the proteostasis network has a limited capacity and its impairment causes protein aggregation that deteriorates both cellular and organismal viability. Our research particularly aims to understand the dynamic regulation of proteolytic pathways that integrate environmental and physiological changes. The detailed analysis of both cellular and tissue-related coordination of proteostasis will allow us to assemble a global picture of conserved quality control mechanisms important to safeguard the organismal proteome in health and disease.

The assembly and maintenance of striated muscles require a tightly balanced proteostasis network. The integrity of sarcomeric structures is permanently challenged upon muscle growth and mechanical stress. In response to eccentric exercise or damage to the myofiber, the conserved myosin-specific co-chaperone UNC-45 shuttles between the Z-disk and myosin containing areas of the muscle sarcomere. The long-term objective of this project is to define proteostasis networks essential for myosin assembly and muscle integrity. A combination of optogenetics, biochemical and *in vivo* imaging techniques will allow us to examine stress-induced changes of protein folding and degradation pathways. The conserved regulation of proteostasis networks will be studied in *C. elegans*, C2C12 mouse myoblasts, and human skeletal muscles in collaboration with the German Sport University Cologne. The proposed project will have broad implications for the understanding of muscle regeneration mechanisms and human myopathies.

Qualifications: We are seeking a highly motivated PhD student to join our enthusiastic and collaborative group. Candidates should have demonstrated outstanding performance through their undergraduate studies. Besides creativity, a strong ability for problem solving through analytical thinking combined with an enthusiasm for scientific research is highly desirable. Additionally, we expect good communication skills, fluent English and the ability for teamwork. The successful applicant will join an enthusiastic and collaborative group where a multidisciplinary approach is pursued.

For more information: <http://www.hoppelab.uni-koeln.de>

How to Apply: Please send your CV, letter of intent, names and addresses of three references to Prof. Thorsten Hoppe, E-mail: office-hoppe@uni-koeln.de.

Application deadline: 30 November 2018