

## Open PhD Student Position (65 %, E13) – CRC1149 project

### Title: Elucidating the pathomechanisms of compromised fracture healing in osteoporosis: Consequences of mitochondrial dysfunction

Osteoporosis is a major health problem characterized by compromised bone strength and consequent increased risk of fracture and impaired healing capacities. So far, the underlying pathomechanisms are only poorly understood and pharmacologic approaches are limited. Our project aims on further investigation of the molecular pathomechanisms of osteoporosis, in particular cellular aging and mitochondrial dysfunction, and testing of novel therapeutic strategies to improve bone healing after fracture.

The project is part of the **prestigious Collaborative Research Centre 1149** (CRC1149) "Danger response, disturbance factors and regeneration after acute trauma" and will be performed in the group of Dr. Jana Riegger-Koch at the RKU ([www.riegger-lab.de](http://www.riegger-lab.de)). The lab is associated to the Division for Biochemistry of Joint and Connective Tissue Diseases, Orthopedic Department, University Hospital of Ulm.

#### Activities and responsibilities:

- human/ mouse primary cell culture, differentiation of mesenchymal stem cells
- molecular biological techniques: gene silencing (siRNA), ELISA, WB, ...
- histology: fluorescence staining, immunohistochemistry (IHC)
- writing publications and presentation of own results on conferences/ retreats

#### Qualification profile:

- master degree in biology, molecular medicine or related field of study
- strong motivation to address bio-medical and pathophysiological questions
- experience in cell and molecular biology would be an advantage

#### We offer:

- direct supervision and training in established methods
- close cooperation with other CRC1149 members
- opportunity to join the International Graduate School in Mol. Medicine Ulm
- development your own scientific profile, incl. additional training opportunities
- funding for 3 years (65 %, E13); starting in December 2023 or later

Applications (CV, certificates etc.) should be send until 15<sup>th</sup> of November to Dr. Jana Riegger-Koch via mail: [jana.riegger@uni-ulm.de](mailto:jana.riegger@uni-ulm.de). Please feel free to contact Jana for further information or visit our homepage [www.riegger-lab.de](http://www.riegger-lab.de)

#### Literature:

- 1: Riegger et al. Cell Death Dis 2019; 10: 683. <https://www.nature.com/articles/s41419-019-1930-5>
- 3: Kirsch et al. Cells. 2022; 11(7), 110. <https://doi.org/10.3390/cells11071106>
- 4: Schoppa et al. DMM. 2022; 15 (5): dmm049392. <https://doi.org/10.1242/dmm.049392>