

Open position in the
Division for Biochemistry of Joint and Connective Tissue
Diseases, Orthopedic Department, University Hospital of Ulm

PhD Student Position (65 %, E13)

Project: Multimodular therapeutic strategies for initial harm reduction and support of regenerative processes after cartilage trauma

Joint injuries involving acute trauma and/or subsequent overload stress of articular cartilage are considered as main risk factor of posttraumatic osteoarthritis (PTOA). So far, the underlying pathomechanisms, comprising inflammation, oxidative stress, cell death and matrix destruction, are only poorly understood and pharmacologic approaches are largely limited to symptomatic relief. Therefore, this project aims on further investigation of the molecular pathomechanisms of PTOA and testing of novel therapeutics and drug release systems addressing both initial harm reduction (cell- and chondroprotection) after trauma as well as subsequent induction of regenerative processes. The project will be performed in the working group of Prof. Dr. Rolf Brenner at the RKU.

Activities and responsibilities:

- human cell and tissue culture: isolation of primary cells (chondrocytes, stem/progenitor cells); differentiation of stem cells; ex vivo traumatization/mechanical loading of cartilage explants; testing of novel therapeutics
- molecular biological techniques: RNA isolation, gene expression analysis, ELISA, western blot
- fluorescence staining; immunohistochemistry (IHC)
- differentiation of stem/progenitor cells
- writing publications and presentation of own results on conferences

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, and possibly first insight into animal experiments would be an advantage.

We offer:

- direct supervision and training in our established methods
- development your own scientific profile, incl. additional training opportunities
- funding (65 %, E13) starting in January 2021

Detailed applications (CV, certificates etc.) should be send until 6th of November to Dr. Jana Riegger-Koch via email: jana.riegger@uni-ulm.de

Literature:

1: Riegger et al. Cell Death Dis 2019; 10: 683.; 2: Riegger et al. Eur Cell Mater. 2018;36:110-127.; 3: Riegger et al. J Cell Mol Med. 2018;22:77-88.; 4: Riegger et al. Osteoarthritis Cartilage. 2016;24:2171-2180.