



Institute for Functional and Clinical Anatomy

Job title:	PhD student (w/d/m)
Limited in time:	36 months
Position:	Full-time
Start:	from June-Jula 2025
Classification:	TVL E13 (65%)
Application Deadline:	May 15, 2025

Adaptive and Automated Regeneration of Vascularized Soft Tissue (Focus: Skeletal Muscle) Using a Patented Tissue Regenerator

As part of the project, an automated system for regenerating vascularized skeletal muscle is being developed using a novel tissue regenerator. This regenerator is based on the concept of adaptive tissue engineering and combines automated processes, intelligent control, and contactless monitoring. The goal is to efficiently recellularize decellularized muscle tissue with human induced pluripotent stem cells (hiPSCs) in order to generate functional skeletal muscle. The interdisciplinary project brings together expertise from medical engineering, mechatronics, and anatomy. Core tasks of the project include the differentiation of hiPSCs into myoblasts, endothelial cells, and nerve cells, the optimization of cell mixing ratios and nutrient media, as well as viability analyses in the bioreactor. A broad range of methods is used, from molecular biology to high-resolution microscopy.

Qualification characteristics:

- University degree in human medicine, dentistry, molecular medicine, veterinary medicine, biology, biochemistry or equivalent
- Great scientific interest, knowledge and practical experience in molecular-cell biological techniques are advantageous
- High intrinsic motivation, team spirit, interest in research related to pluripotent stem cells and tissue regeneration, sociability, and the ability to work independently
- Willingness to work on weekends
- No participation in student teaching

Significant applications should be sent to:
 Professor Dr. med. Dr. h.c. Friedrich Paulsen
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