

PhD student positions immediately available

Background

The lab is interested in signal transduction pathways regulating different aspects of myogenesis and formation/maintenance of neuromuscular synapses.

Selected Previous Work

Huraskin et al, Development, 2016

Here, we elucidated the role of canonical Wnt signaling activity in adult muscle fibers using a well-established Axin2-lacZ reporter mouse paradigm. In these mice, canonical Wnt signaling is reflected by lacZ expression under control of the endogenous Axin2 promoter. We detected active canonical Wnt signaling (1) in myotubes derived from cultured C2C12 cells or murine primary myoblasts, (2) in muscle fibers of type IIa and, most likely, type IIx, (3) at neuromuscular synapses and (4) during regeneration of skeletal muscle after injury. Interestingly, YAP/Taz/Tea1-mediated signaling accompanied canonical Wnt signaling in adult muscle fibers.

Kravic et al., Autophagy, 2018

Here, we asked whether CSNK2 phosphorylates TOMM22 in skeletal muscle fibers of mice and whether this influences mitochondrial physiology. We show that (1) CSNK2 phosphorylates TOMM22, (2) CSNK2-dependent TOMM22 phosphorylation is not involved in the regulation of mitochondrial protein import in vitro, (3) skeletal muscles from skeletal muscle Csnk2b cKO mice contain dysfunctional mitochondria, and (4) mitophagy markers are involved in the removal of impaired mitochondria.

Projects

The projects in the lab deal with better understanding of molecular pathways in myogenesis in health and disease. To this end, we use genetically modified mice with floxed alleles. We analyze muscle phenotypes of mutant mice by their behavior, grip strength measurements, and histological / histochemical / immunostainings of muscle sections. We investigate the NMJs of the mutant mice by structural and functional approaches, like 3D morphometrical imaging, and electrophysiological recordings of neuromuscular transmission. Muscular target genes will be analyzed by RNA-Seq. Altogether, our projects help to understand individual and concerted roles of both intracellular signaling pathways regarding neuromuscular biology.

Your profile

You should be a young motivated scientist with excellent marks and willing to use this opportunity for your scientific career.

Our lab is speaking english and german language (you should be able to speak at least one of both). PhD student candidates should have a degree in a relevant field. These positions will provide you with a monthly salary of approx. 1.250,-- € after tax. Please send your application and curriculum vitae as soon as possible by e-mail.

How to apply

Please send your application ideally as a single PDF by E-Mail.
Thank you.

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