Medical University of Graz

PhD Guest Lecture

"Stress granule proteins integrate metabolic signals and controls lysosomal TSC recruitment and mTORC1 suppression"

by Dr. Kathrin Thedieck University of Innsbruck

Kathrin Thedieck is Professor and Institute Head of Biochemistry at the University of Innsbruck. Her research spans the field of metabolic signaling with a focus on networks converging on the metabolic master regulator mechanistic target of rapamycin (mTOR). Her group pioneered crosstalk of mTOR with RNA-protein networks. In her talk, she will report on a non-canonical role of an RNA-binding protein in membrane associated mTOR signaling. Are you curious about Kathrin Thedieck's research?

The tuberous sclerosis protein (TSC) complex acts as a tumor suppressor by restricting signaling through the metabolic master regulator mTORC1 (mechanistic target of rapamycin complex 1). The TSC complex senses anabolic signals, and suppresses pro-tumorigenic processes by inhibiting mTORC1 at its central signaling platform – the lysosomes. We recently reported that the core stress granule proteins G3BP1 and G3BP2 (Ras GTPase- activating protein-binding proteins, G3BPs) anchor the TSC complex to lysosomes and suppress activation of mTORC1 by nutritional signals. Thus, stress granule proteins act in the absence of stress to mediate metabolic signals to mTORC1 at lysosomal membranes, suggesting a novel mode of TSC-mediated nutrient sensing. Our findings open new avenues for the treatment of diseases driven by mTORC1 hyperactivity, including breast cancer and neurological disorders.

PhD Program

MOLMED

WHEN: 21.06.2022, 5:00 pm

WHERE: Lecture Hall Center, Hörsaal D

Further information: www.metabolic-signaling.eu