

Regular Wednesday IMG seminar



Karolina Kowalska

Laboratory of Structural Neurobiology

**“Mechanisms of MICAL regulation
in actin filament disassembly”**

Actin oxidation at specific methionine residues is a distinctive mechanism that drives actin filament disassembly. This process is mediated by the cytoskeletal effector MICAL, which selectively associates with and oxidizes actin filaments, thereby promoting their disassembly. MICAL-dependent actin oxidation is essential for axon guidance and also contributes to other biological processes, including angiogenesis, vesicle trafficking, and cytokinesis. Despite its broad biological importance, the molecular basis of MICAL regulation has remained unclear. In this talk, I will show how structural biology approaches, particularly cryo-EM, combined with biochemical assays, provide mechanistic insight into MICAL autoinhibition and its activation by Rab GTPases.

The seminar will be held

on Wednesday 22 April 2026 at 15:00

in the Lecture room 0.195 at IMG

(Institute of Molecular Genetics of the Czech Academy of Sciences, Vídeňská 1083, Prague 4)
