Institute of Molecular Genetics
of the Czech Academy of Sciences

Regular Wednesday IMG seminar

Lucie Janečková

Laboratory of Cell and Developmental Biology

"NG2-lineage cell plasticity in ischemic brain repair: Roles of Wnt signaling"

Focal cerebral ischemia (FCI) leads to neuronal loss followed by extensive tissue remodeling, in which glial and vascular cell populations play indispensable roles. Among these, NG2 glia and perivascular NG2$^+$ cells represent highly plastic cell types that actively participate in post-ischemic responses, yet their functional heterogeneity and regulatory mechanisms remain poorly understood. In this lecture, I will present our work investigating how these cell populations respond to ischemic injury and how modulation of Wnt/β-catenin signaling reshapes their cellular states and functions. By combining lineage tracing, transcriptomic analyses, and imaging approaches, we uncover changes in oligodendrocyte differentiation, perivascular cell behavior, and their contributions to tissue repair and regeneration. Finally, I will introduce an ongoing spatial transcriptomics study aimed at mapping cellular organization in the ischemic periphery and glial scar, highlighting emerging spatial patterns and open questions in brain regeneration.

The seminar will be held

on Wednesday 11 February 2026 at 15:00

in the Milan Hašek Auditorium at IMG

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