IMG

Institute of Molecular Genetics
of the Czech Academy of Sciences

Regular Wednesday IMG seminar

Nándor Nagy

Semmelweis University, Faculty of Medicine, Budapest, Hungary

"Understanding the enteric nervous system development through the avian embryo model: implications for regenerative biology"

In this presentation, I will provide an overview of enteric nervous system (ENS) development from the perspective of the avian embryo. The ENS, often referred to as the "second brain," originates from vagal neural crest cells that migrate into the developing gut and differentiate into neuronal and glial networks that regulate intestinal function. Avian species, particularly chicken and quail, have long served as powerful model organisms for studying the cellular and molecular mechanisms regulating ENS formation, because their embryos are easily accessible, rapidly developing, and highly suitable for experimental manipulation. Today, with new tools such as *in ovo* electroporation, retroviral gene transfer, and CRISPR-based editing, the avian model again provides unique opportunities to study enteric neurogenesis in vivo. Integrating classical embryonic manipulation approaches with single-cell and spatial transcriptomic analyses now provides a comprehensive framework for understanding enteric neurogenesis, lineage diversification, and the evolutionary conservation of neural crest–derived systems across vertebrates.

The seminar will be held

on Wednesday 19th November 2025 at 15:00

in the Milan Hašek Auditorium at IMG

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