

Regular Wednesday IMG seminar



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“Turning back the clock on neurodegeneration: transcriptional rejuvenation of motor neurons”

To paraphrase Dobzhansky’s famous aphorism: nothing in neuroscience makes sense except in the light of motor behavior. Our work focuses on spinal motor neurons - the final common path in motor control and the primary target of degeneration in amyotrophic lateral sclerosis (ALS). Leveraging developmental insights from human and mouse stem-cell models, we aim to divert motor neurons from vulnerable, disease-sensitive states into resilient phenotypes while preserving their physiological function. To achieve this, we pursue a dual strategy:

- 1) Targeted Pharmacology:** We developed novel kinase inhibitors that counteract motor neuron vulnerability to endoplasmic reticulum (ER) and proteostatic stress; shared pathogenic drivers across ALS, Parkinson’s, Huntington’s, and Alzheimer’s diseases.
- 2) Transcriptional Reprogramming:** We established approaches to rejuvenate motor neurons, bolstering their capacity to clear misfolded proteins, and methods to reprogram them toward subtype identities naturally resistant to ALS pathology. By dissecting the genetic programs governing neuronal specification and maturation, we seek to establish conceptually novel therapeutic paradigms to halt neurodegeneration.

The seminar will be held

on Wednesday 14 October 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)
