Regular Wednesday IMG seminar

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"Plectin loss disrupts mechanotransduction and attenuates hepatic stellate cell activation"

Liver fibrosis, a hallmark of fibroproliferative disorders that contribute to nearly 45% of global mortality, is primarily driven by the activation of hepatic stellate cells (HSCs). In response to injury-induced tissue stiffening, HSCs undergo mechanosignaling-dependent activation and deposit excessive extracellular matrix (ECM), perpetuating a self-sustaining fibrotic loop. We sought to disrupt this process by targeting plectin, a cytolinker protein central to mechanotransduction. Using an HSC-specific plectin knockout (KO) mouse model, we observed significantly reduced ECM accumulation following carbon tetrachloride–induced injury. In vitro, plectin-deficient HSCs displayed impaired proliferation, migration, and focal adhesion formation. Single-cell transcriptomics further revealed attenuated activation signatures in KO HSCs. Together, our findings establish plectin as a key regulator of HSC mechanosignaling and highlight its potential as a therapeutic target to alleviate liver fibrosis.

The seminar will be held

on Wednesday 18 March 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