IMG

Institute of Molecular Genetics
of the Czech Academy of Sciences

Regular Wednesday IMG seminar

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"Structural and functional remodeling of the bone marrow stromal microenvironment during tissue regeneration and acute myeloid leukemia"

Bone marrow (BM) tissues are the prime sites for hematopoietic cell production, long-term reservoirs for immunological memory and hubs in which bone metabolism is orchestrated. The BM is comprised of a complex hematopoietic compartment, as well as a heterogeneous stromal fraction made of endothelial, mesenchymal and neural cells, which beyond proving the necessary tissue infrastructure, play fundamental regulatory roles in fine-tuning hematopoietic cell production. Stromal cells have also been shown to crucially contribute to hematological disease and marrow regeneration post-myeloablative damage. We combine 3D quantitative microscopy (3D-QM) techniques pioneered in our lab, novel reporter mouse models and single cell sequencing to analyze the compositional and structural organization of BM stroma in murine and human marrow samples. In this talk I will describe our findings on the dynamic spatial reorganization of major stromal components, and the localization of HSCs during the remodeling process that leads to the regeneration of normal marrow tissues following myeloablation. I will also present our latest work on the detailed single cell analysis of the human BM microenvironment and the alterations presented during aging as well as in patients with Acute Myeloid Leukemia.

The seminar will be held

on Wednesday 7th May 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)