

## Regular Wednesday IMG seminar



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**Laboratory of Biology of the Cell Nucleus**

### **“PIP2-RNA-protein interactions in phase separation of Pol II transcription”**

The RNA Polymerase II transcription is a multifaceted process crucial for gene expression in eukaryotic cells. Over the last decade, liquid-liquid phase separation (LLPS) was shown to be crucial in regulation of RNA pol II transcription. We have shown that nuclear phosphoinositides are pivotal for regulating biological processes and PIP2 has been shown to localize with RNA Pol II machinery and nascent RNA, linking it to the initiation step of transcription. Here, by using lipid-interacting RNA sequencing (LIPRNAseq) and confocal microscopy, we found a PIP2-binding AU-rich RNA motif and identified the long non-coding RNA HANR (lncHANR) in complex with PIP2 as a part of oncogenic super-enhancers in perinucleolar region of the nucleus. Furthermore, we used PIP2-pull down coupled with mass spectrometry to identify RNA-dependent PIP2 interactome associated with nuclear processes emphasizing the role of PIP2 in liquid-liquid phase separation of RNA Pol II transcription machinery.

**The seminar will be held**

**on Wednesday 12<sup>th</sup> February 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)