Conférence

CRCHUM

Université de Montréal

AXE NEUROSCIENCES

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Insight into TDP-43 dysfunction in ALS and Alzheimer's disease

Systematic organelle analysis—organellomics—offers powerful insights into cellular states and disease mechanisms. I will present a deep phenotypic learning platform based on AI-driven vision transformers that enables the analysis of 25 distinct organelles in human neurons. This approach reveals previously unrecognized interactions between cytoplasmically mislocalized TDP-43, a pathological hallmark of ALS, and processing bodies (P-bodies), which are biomolecular condensates involved in mRNA stability. In addition, I will discuss TDP-43 proteinopathy in Alzheimer's disease (AD), highlighting its contribution to splicing dysregulation beyond the ALS–FTD spectrum. Our findings mechanistically link TDP-43 pathology to increased amyloid-β production, bridging ALS–FTD and AD, and offering new insights into the molecular convergence of neurodegenerative diseases.

Vendredi 21 novembre 2025
12h à 13h

R05.212
Ou via Zoom :
https://us06web.zoom.us/j/83756177122?pwd=3rYvqbMOvceW3vljmzPQ1KfBf1h5az.1

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