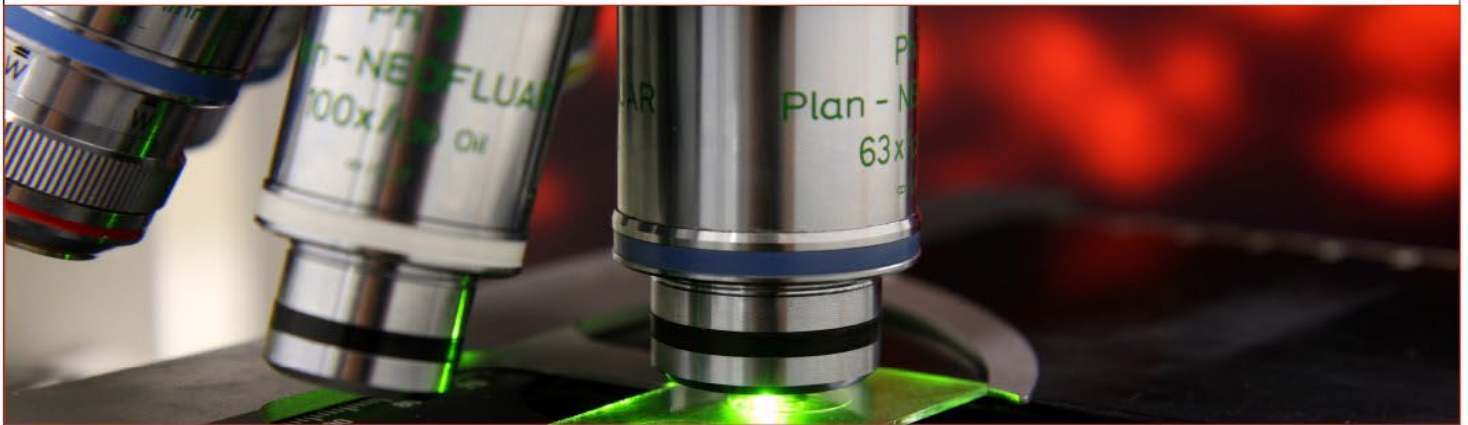


SÉMINAIRES ET CONFÉRENCES



JOHN LACAVA

European Research Institute for the Biology of Ageing University Medical Center Groningen

“LINE-1 retrotransposons: interactomes, structures, and implications in human diseases”

In this talk I will present vignettes showcasing our latest research on LINE-1 (L1) retrotransposons. L1 is the only active, autonomous (protein coding) retrotransposon in humans; non-autonomous SINEs, such as Alu, hijack L1 for their own mobilization. L1 proliferates in genomes through a 'copy-and-paste' mechanism that involves a viral-like ribonucleoprotein intermediate, imbued with immunogenic pathogen associated molecular patterns. L1 proteins (ORF1p, ORF2p) preferentially assemble with the L1 RNA that encodes them (a property termed cis preference), implying a mechanism of assembly that restricts trans complementation. These assemblies are poorly understood and heterogeneous in composition, incorporating many other RNAs and host proteins that form abundant cytoplasmic foci (RNA granules) - I will present our insights about these L1 assemblies. ORF2p is the 'business end' of L1, possessing the requisite endonuclease and reverse transcriptase activities; I will present the first experimentally determined structures of the L1 reverse transcriptase and full length ORF2 protein. Consistent with its mutagenic potential and parasitic properties, L1 is normally silenced in most somatic cells. However, dysregulation of L1 expression is associated with several human diseases - e.g., cancer, autoimmunity, neurodegeneration - and, generally, with aging. L1 therefore represents a promising biomarker opportunity and therapeutic target, which I will also present and discuss.



Faculté de médecine
Département de biochimie
et médecine moléculaire

Université 
de Montréal

Lundi 27 novembre, 11h30

Pavillon Joseph-Armand-Bombardier, Salle : 1035

ET

[Lien Zoom](#)

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