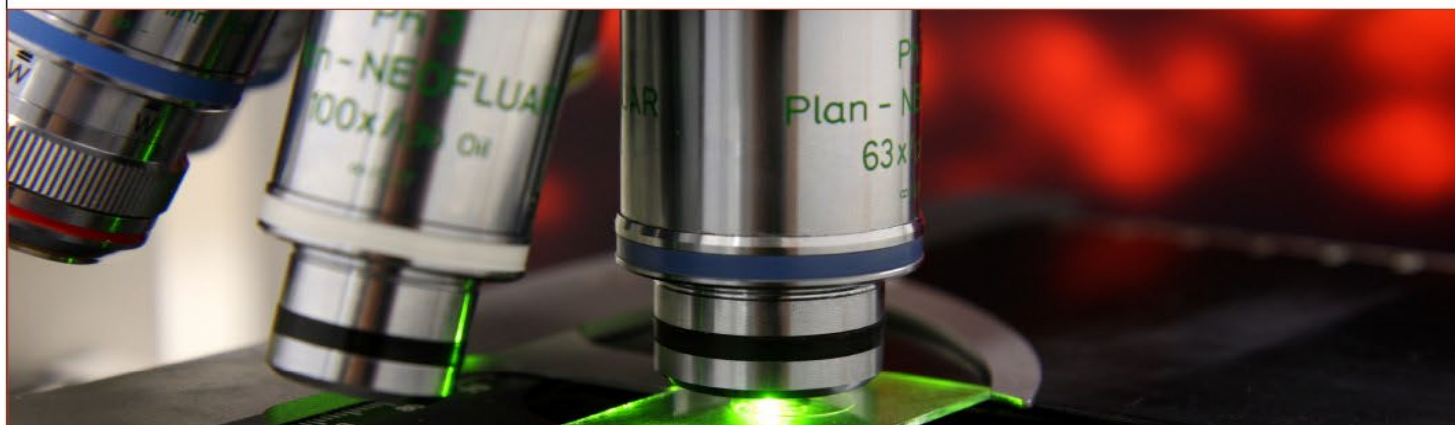


SÉMINAIRES ET CONFÉRENCES



DIMITRIOS ANASTASAKIS

RNA Molecular Biology

National Institute of Arthritis and Musculoskeletal and Skin Diseases

“PKM2 binds pre-mRNA G-quadruplexes revealing a novel cancer regulome”

Increasing evidence suggest that in any given moment and under normal cellular conditions, the majority of RNA G-quadruplex (rG4) forming sequences in mammalian cells are unfolded. Contrary to this hypothesis, we found that the central glycolytic enzyme Pyruvate Kinase Muscle 2 (PKM2) poses a moonlighting function when entering the nucleus of human cells where it binds folded pre-mRNA rG4s to promote gene expression. Our observations suggest that in the nucleus of human cells, putative pre-mRNA rG4 sequences exist both in a folded and unfolded state and pose a novel means of gene regulation. In addition, a pan cancer and systems-wide meta-analysis of The Cancer Genome Atlas transcriptomic data showed that a global switch from a rG4-poor to a rG4-rich transcriptome correlates with poor survival. This finding exposed rG4 structures and potentially the PKM2-rG4 interaction as a targetable vulnerability of cancer and brought to surface a novel regulome, the rG4-regulome.



Faculté de médecine
Département de biochimie
et médecine moléculaire

Université 
de Montréal

Le lundi 27 mars, 11h30

Pavillon Joseph-Armand-Bombardier, Salle : 1035

ET

[Lien Zoom](#)

invité de Pascale Legault
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