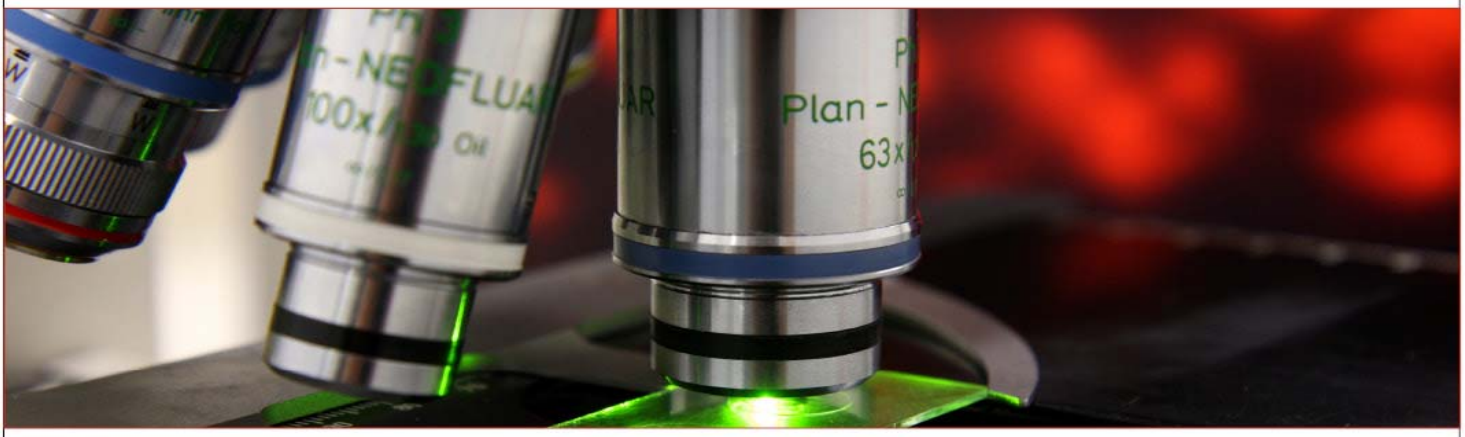
SÉMINAIRES ET CONFÉRENCES



Steve Jean

Université de Sherbrooke
Département d'anatomie et de biologie cellulaire

« Proteomic and genetic approaches to understand RAB GTPases cellular roles »

RAB GTPases are important regulators of membrane trafficking events. RAB activity is tightly controlled through the concerted actions of activating guanine exchange factors (GEFs), and inactivating, GTPase activating protein (GAPs). Upon activation, RABs interact with a wide range of effectors to direct trafficking functions of eukaryotic cells. RAB effectors were mostly identified through *in vitro* pull-down or yeast two-hybrid approaches. Unfortunately, due to intrinsic limitations of these techniques, a thorough identification of RAB interactors is still missing. Here, I will discuss our use of APEX2-mediated proximity labelling of RAB GTPases to comprehensively identify RABs neighbors/interactors and regulators (GEFs, GAPs). Significantly, from the APEX2-generated proteomic data and the use of RAB21 knockout cells, we identified a novel interaction between RAB21 and the WASH/retromer complexes with important role in sorting of clathrin-independent cargos. Given the nature of these cargos, we have tested functionally the role of RAB21 in mTOR signaling and preliminary evidences suggest that RAB21 is required for mTORC1 and mTORC2 functions in HeLa cells. Hence, APEX2-mediated proximity labeling of RAB neighbors represents a novel and efficient tool to define new RAB functions.

Faculté de médecine
Département de biochimie et médecine moléculaire
Université de Montréal

Le lundi 15 octobre 2018, 11h30

Pavillon Roger-Gaudry
Salle : G-415

Gerardo Ferbeyre
Tél : (514) 343-7571 courriel : g.ferbeyre@umontreal.ca