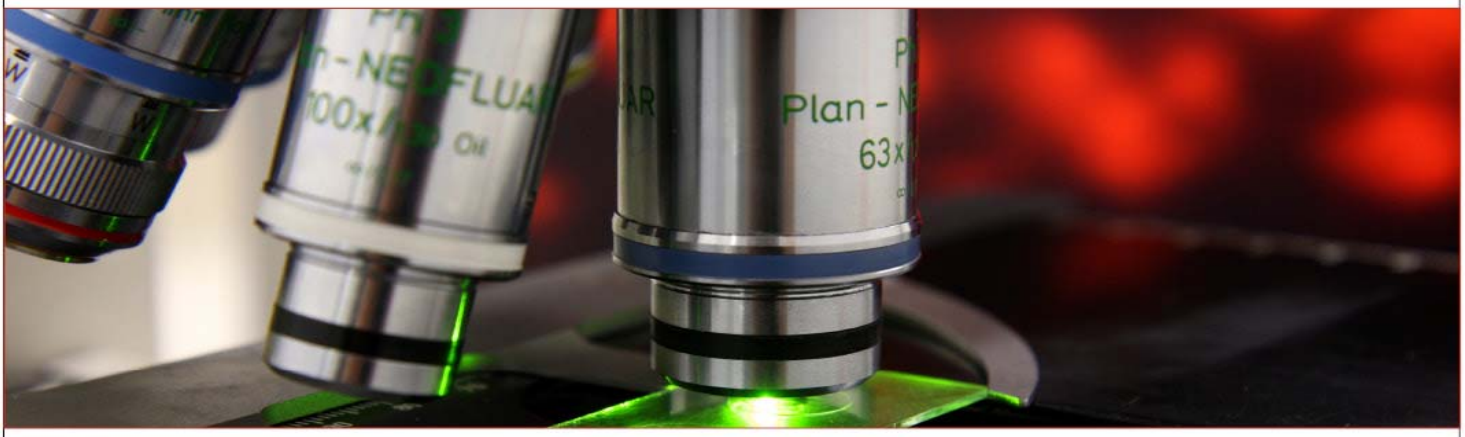
SÉMINAIRES ET CONFÉRENCES



John Rubinstein

Departments of Biochemistry and Medical Biophysics, The University of Toronto

« Electron cryomicroscopy of rotary ATPases »

Due to recent methodological development, single particle electron cryomicroscopy (cryo-EM) has reached the stage where it can be used to obtain high-resolution insight into the structure and function of macromolecular assemblies. Our group uses cryo-EM to study the structures of rotary ATPases and related macromolecular machines. We also work to develop new methods for cryo-EM to facilitate these studies. Ion-translocating rotary ATPases serve either as adenosine triphosphate (ATP) synthases, using energy from a transmembrane ion motive force to create the cell's supply of ATP, or as transmembrane ion pumps that are powered by ATP hydrolysis. The members of this family of enzymes each contain two rotary motors: one that couples ion translocation to rotation and one that couples rotation to ATP synthesis or hydrolysis. Our recent studies have not only illuminated the structures of these fascinating molecular motors at unprecedented resolution, but have also started to uncover their dynamics through computational isolation of the different conformations of the enzymes that exist simultaneously in solution. This lecture will describe some of tools we have helped to develop, the latest structures we have determined for the mitochondrial ATP synthase and proton pumping V-ATPase, and what we have learned about how these enzymes function and how they interact with molecules that affect their activities.

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

Le lundi, le 15 janvier 2018, 11:30

Pavillon Roger-Gaudry
Salle : G-1015
Invité James Omichinski

Tél : (514) 343-7341 courriel mailto: jg.omichinski@umontreal.ca