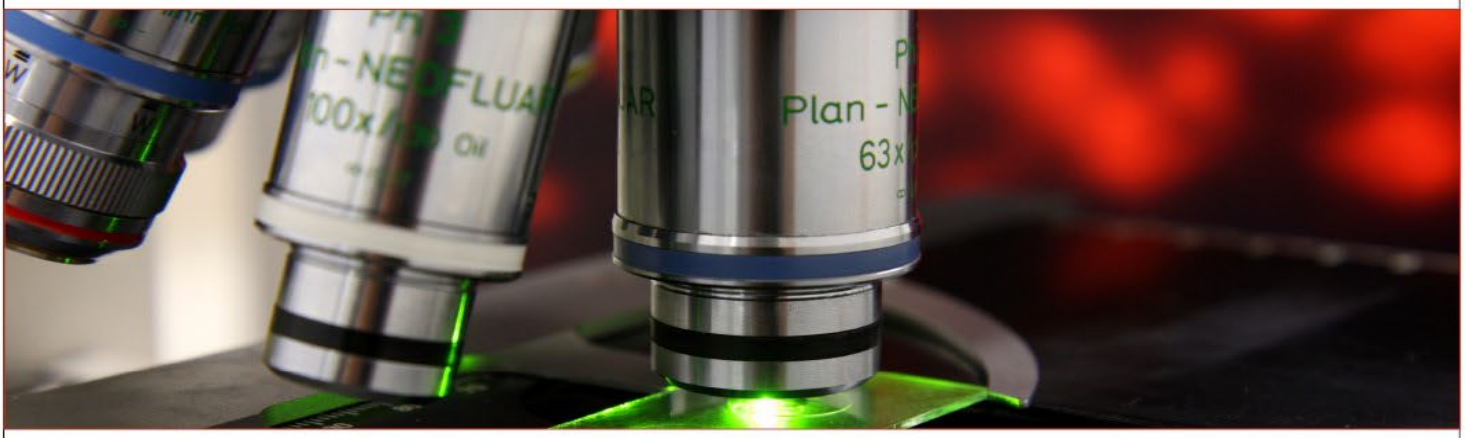
SÉMINAIRES ET CONFÉRENCES



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"A biodiversity approach to understanding respiratory complex I regulation "

Respiratory complex I is a proton-pumping oxidoreductase key to bioenergetic metabolism. Biochemical studies have found a divide in the behavior of complex I in metazoans that aligns with the evolutionary split between Protostomia and Deuterostomia. Complex I from Deuterostomia including mammals can adopt a biochemically defined off-pathway 'deactive' state, whereas complex I from Protostomia cannot. The presence of off-pathway states complicates the interpretation of structural results and has led to considerable mechanistic debate. Here, I will discuss the structure and function of mitochondrial complex I from different organisms including the model protostome *Drosophila melanogaster*. The resting-state structure of *Dm*-CI reveals multiple conformations including a helix-locked state in which an α-helix wedges between the peripheral and membrane arms. Comparison of the *Dm*-CI structures and function to those observed in yeast, plants, ciliates and mammals provides insight into the roles of subunits across organisms and raises questions regarding current mechanistic models of complex I regulation.

Lundi 22 avril 2024, 11h30

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