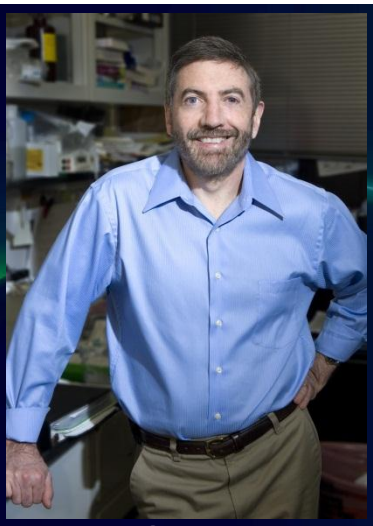
Faculté de pharmacie

Séminaire de l'axe

« Cibles thérapeutiques et pharmacothérapie »



"Defective Inflammation Resolution in Atherosclerosis: Mechanisms and Therapeutic Potential"

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Institut de cardiologie de Montréal

16 h 00 – salle C-1890

À l'invitation du professeur Sylvie Marleau

Uncontrolled inflammation and its failed resolution are now recognized as central components in the most prevalent human diseases in the developed world, including cancer, diabetes, and atherosclerotic cardiovascular diseases. Resolution of inflammation is regulated by specialized pro-resolving mediators (SPMs) that comprise arachidonic acid (AA)-derived lipoxins (e.g. LXA4) and omega-3 fatty acid-derived resolvins (e.g. RvD1). A critical enzyme in the biosynthesis of lipoxins and resolvins is 5-lipoxygenase (5-LOX). Notably, 5-LOX is also a key enzyme for pro-inflammatory leukotriene (e.g. LTB4) production. Emerging evidence suggests that the imbalance between pro-inflammatory and pro-resolving mediators such as LTB4 and LXA4, respectively, is critical in determining whether inflammation persists or resolves. Because 5-LOX is involved in the biosynthesis of both LTB4 and LXA4 from arachidonic acid (AA), understanding new mechanisms related to its regulation is our key objective to understand how the balance between inflammation and resolution is controlled in health and disease. This seminar will focus on the mechanism of how the pro-resolving mediator, RvD1, regulates the balance between LXA4 and LTB4 in macrophages and how RvD1 affects inflammation resolution in a proof-of-concept in vivo model. Moreover, the role of 5-LOX in atherosclerosis will be discussed, as will the therapeutic potential of RvD1 and an RvD1 receptor-activating peptide delivered to plaques through targeted nanoparticles.

Ce séminaire a été rendu possible grâce à la collaboration de Rx&D et de l'ICM

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