McGill University Research Centre on Complex Traits
MRCCT SEMINAR SERIES

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Title: "Secrets and lyase: New roles of S1P in the immune system"

Wednesday, April 11, 2018

McIntyre Bldg. | Room 521, 12:00 PM

McIntyre Medical Sciences Building

"The signaling lipid sphingosine 1-phosphate (S1P) plays many roles in the immune response. Most notably, S1P regulates lymphocyte exit from lymphoid organs, where they are initially activated, into circulation, where they can travel to the site of infection. The concentration of S1P is higher in lymph than lymph nodes. This gradient guides lymphocytes out of lymph nodes into lymph and ultimately back to blood. Similarly, the high S1P within blood attracts lymphocytes to exit the spleen into circulation. T cells sense the S1P gradient primarily through the G protein-coupled receptor S1P receptor 1 (S1PR1). FTY720, a drug that targets four S1P receptors including S1PR1, became the first FDA-approved oral therapeutic for multiple sclerosis. By blocking lymphocyte exit from lymphoid organs, FTY720 prevents lymphocytes from accessing the central nervous system. Second-generation drugs that target S1PR1 have also shown promise in Phase II trials for psoriasis and colitis. Despite its importance, many questions remain about how S1P shapes the immune response, in part because we have few tools to map lipid gradients in tissues. We will discuss how S1P distribution is regulated, as well as novel roles of S1P in the immune response beyond egress."

LOCATION: **McIntyre Medical Sciences Building, Room #521, 12:00 PM**

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