

The Centre for Blood Research presents

CBR SEMINAR SERIES



Wednesday, January 11, 2023
1:00PM - 2:00PM PT

Life Sciences Centre
1003 (LSC3) & Zoom

“Platelets from 13-lined ground squirrels are resistant to cold storage lesions”

Dr. Scott Cooper

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Hibernating ground squirrels have dramatically decreased heart rates (3-5 beats per minute) and blood flow, which should put them at risk of forming blood clots. In response, they have several adaptations during hibernation that prevent blood clotting, including 3-fold decreases in Factors VIII (FVIII) and IX (FIX), and 10-fold decreases in von Willebrand factor (vWF), neutrophils, and platelets. Ground squirrel platelets are resistant to *in vivo* and *in vitro* cold storage lesions and are not rapidly cleared after transfusion. This could be due to a combination of altered signaling pathways, resistance to cold-induced cellular damage, and interactions with extracellular factors. This research is pioneering the use proteomic and metabolomic techniques to determine how ground squirrel platelets are resistant to cold storage lesions in platelets and could lead to medical advances to treat thrombocytopenia, store human platelets in the cold for transfusions, and regulate blood coagulation in cases of accidental or induced hypothermia.

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