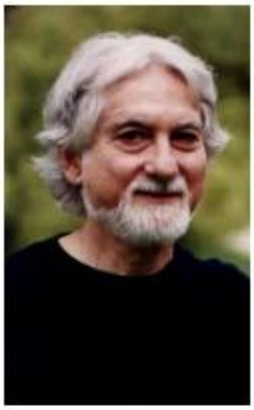
# The Centre for Blood Research CBR

**Wednesday, January 16, 2013**
**12:00 pm**
**in LSC3**

**Life Sciences Centre**
**2350 Health Sciences Mall**




## Dr. Morley Hollenberg

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# "Coagulation Proteinases, their receptors (PARs) and inflammatory disease"

The coagulation pathway serine proteinases, like thrombin, Factor VIIa/Xa, and activated Protein C (APC) are now known to regulate cell signaling by cleaving and activating a novel family of G-protein-coupled Proteinase-activated Receptors (PARs 1 to 4) via exposure of a 'tethered' receptor-triggering ligand (Adams et al., 2011). On their own, short synthetic peptides based on the 'tethered ligand' sequences of the PARs (PAR-APs) can, in the absence of receptor proteolysis, selectively activate PARs 1, 2 and 4 and cause physiological responses both *in vitro* and *in vivo.* Using the PAR-APs as probes *in vivo*, it has been found that PAR activation can affect the vascular, renal, respiratory, gastrointestinal, musculoskeletal and nervous systems (both central and peripheral) and can promote cancer metastasis and invasion (Ramachandran & Holleenberg, 2008). The responses triggered by PARs 1, 2 and 4 are in keeping with an innate immune inflammatory response, ranging from vasodilatation to intestinal inflammation, increased cytokine production and increased nociception. Further, PARs have been implicated in a number of disease states including cancer and inflammation of the cardiovascular, respiratory, musculoskeletal, gastrointestinal and nervous systems. Moreover, PAR-regulating proteinases have been implicated in pathogen-induced inflammation. The seminar will provide an overview of the molecular pharmacology of the PARs, their potential role in a variety of inflammatory diseases and their likelihood as therapeutic targets for inflammatory disease and cancer (Ramachandran et al., 2011).

This Seminar is sponsored by:

Bayer HealthCare

*Host: Dr. Ed Conway, CBR Director, Professor of Medicine, UBC*

UBC CBR

Refreshments will be served 10 minutes before the seminar
Seminar information: 604 822 7407

LSI