

The Department of Chemistry and Biochemistry

Seminar Series

Presents a Seminar Titled:

“Viral Peptides that Inhibit the Innate Immune Response in Humans: Mechanistic Studies and Clinical Potential”



Presented By

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Associate Professor

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Our laboratory studies the human astroviruses, a family of non-enveloped, icosahedral RNA viruses that cause gastroenteritis, predominantly in infants. We have demonstrated that astrovirus capsid protein suppresses the complement system, a fundamental component of the innate immune response against pathogens in vertebrates. We have recently defined the complement inhibiting region to a peptide of 15 amino acid residues. We are interested in determining the mechanism whereby these peptides inhibit complement activation and its effects on the virus life cycle. A second area of interest for our laboratory is the development of these complement suppressing peptides as a therapeutic for complement-mediated disease. Whilst the human complement system represents a front-line defense against pathogens such as bacteria and viruses, its uncontrolled activation can lead to severe pathology in many different inflammatory and autoimmune disorders with an immune component such as systemic lupus erythematosus, rheumatoid arthritis, inflammatory bowel disease, ischemia-reperfusion injury (myocardial infarct, stroke), glomerulonephritis, adult respiratory distress syndrome, transplant rejection, graft versus host disease and burn injuries. Given the very potent inhibition of the astrovirus derived peptides on the complement system, we are currently interested in developing these peptides into a therapeutic compound as method for regulating aberrant complement activity.”

Thursday, February 14, 2013 at 12:20 in BAL 1012