

**MASS SPECTROMETRY-ENABLED SCIENCE
AND ENGINEERING (MS-ESE)
SEMINAR
[HTTP://WWW.MS-ESE.CA/](http://www.ms-e.se.ca/)**

These talks are open to ***EVERYONE*** and should be of interest to many in
OUR GRAD PROGRAM.

Instrument Development/
Ion Chemistry

Proteomics

S P E A K E R

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**"Novel approaches to targeted protein analysis using LC-
MRM in an HSV2 vaccine candidate"**

Date: Thursday November 5, 2015

Location : 306 Lumbers Building

Time: 3:00 PM- 4:00 PM

Abstract:

The capabilities of mass spectrometry are continuously increasing within the bio-pharmaceutical industry. Until recently, the primary focus of mass spectrometry in vaccine research and development has been as a characterization and identity tool, particularly for recombinant protein candidates. However, newer mass spectrometry workflows are being evaluated for both targeted analysis and quantitation of proteins in more complex vaccine candidates. This work focuses on the development of a targeted assay for two HSV-1 proteins: HELI and DNBI (UL5 and UL29 gene products), detected in an HSV-2 replication deficient, live-attenuated vaccine candidate. The HELI and DNBI proteins are expressed by a complementary cell line, AV529, used to produce the HSV529 candidate. After detection and characterization of the vaccine candidate for HELI and DNBI components using nanoLC techniques; the development of a novel MRM assay using a high flow UPLC and a simplified chromatographic method was designed. Sensitivity of the MRM assay for HELI and DNBI was established at high flow, and linearity of response was shown in the range of the LLOQ. Our results demonstrate the unique sensitivity of MRM methods for detection of targeted proteins, and establish specificity for the HSV-1 proteins HELI and DNBI, in the candidate vaccine lots.