



Research Collaboration Opportunity

Title: Next-generation molecular diagnostics for emerging and re-emerging viral diseases

PIs:

Dr. François Jean, University of British Columbia

Technology/Platform:

Novel MRM-MS assays for molecular diagnosis of human virus infections and antiviral drug discovery

Description:

To address the drawbacks of existing laboratory screening and diagnostic tests for emerging and re-emerging viral diseases, Dr. François Jean at UBC has developed a new platform to diagnose and serotype virus-associated infections through the use of mass spectrometry. Serotype-specific "signature" peptides for each virus have been identified. These peptides are analysed by multiple reaction monitoring (MRM), allowing for highly specific, sensitive, rapid, and multiplexing detection and absolute quantification of infectious viral particles and secreted viral proteins that addresses the limitations of current clinical and laboratory diagnostic practices. Potential applications span from primary clinical diagnoses, triage, and case management in endemic areas, to differential identification and characterization of new virus outbreaks in non-endemic areas. Other applications include optimizing the MRM-MS assays as companion diagnostic tests for antiviral drug discovery programs directed at human viruses.

Research stage:

MRM-MS assays for multiplexing detection and absolute quantification of "signature" viral peptides are optimized and validated for all four dengue viruses. Proof-of-concept for the MRM-MS assays are available for West Nile virus and Ebola virus. MRM-MS assays are now being developed for Zika virus.

Types of collaborations:

Industry partners to facilitate the further development and application of the new MS-based technology in the areas of molecular diagnostics and antiviral drug discovery

IP Status:

UBC UILO Technology #14-082

Contact:

François Jean, Ph.D.

Scientific Director, UBC Facility for Infectious Disease and Epidemic Research (FINDER)

Associate Professor, Department of Microbiology and Immunology, UBC

Team Leader, NCE IC-IMPACTS Grant in Next Generation Molecular Diagnostics for Emerging Viral Diseases

3559-2350 Health Sciences Mall, Vancouver, BC V6T 1Z3 Canada

Tel: (604) 822-0256 Email: fjean@mail.ubc.ca website: www.microbiology.ubc.ca/jean