

Bankhead-Coley Cancer Research Program

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*Oncologic Sciences
H. Lee Moffitt Cancer Center & Research Institute*

*2009 Program
Shared Instrument Grant
(1-year project)*

Project Title: Quantitative Mass Spectrometer for Preclinical Modeling and Cancer Patient Assessment

Project Summary: This project is for the purchase of an instrument system for quantitative proteomics, which yields quantitative information about all proteins in a sample. The system includes the Waters NanoAcquity ultra high-pressure liquid chromatograph coupled to a Thermo TSQ Vantage triple quadrupole mass spectrometer. This system will be placed in the Proteomics Facility at the Moffitt Cancer Center and used for liquid chromatography-multiple reaction monitoring (LC-MRM) of peptides obtained from complex biological mixtures. Specifically, the instrument will be used to quantify biologically and clinically relevant targets in complex samples including cell lysates, tumor tissue homogenates, and biological fluids. In addition, this instrument will play a major role in biomarker validation experiments and the development of assays that can be directly applied to patient samples to derive a molecular basis for personalized medicine and provide additional tools for patient assessment. The molecularly driven research at the H. Lee Moffitt Cancer Center & Research Institute will greatly benefit from the addition of this instrument to our Proteomics facility. This LC-MRM system will complement the existing analytical tools and significantly strengthen the infrastructure available to the cancer center's researchers for conducting basic scientific, translational, and clinical research.