

Re: PRG2012 Proteomics Study Sample Request

Key words: Quality Control, standard digest, intra-laboratory, LC-MS/MS.

January 3, 2012

Dear Fellow ABRF Member:

Happy New Year! The 2012 ABRF Proteomics Research Group (PRG) is pleased to announce initiation of a study focused on quality control and reproducibility in the proteomics lab. We invite you to participate in this study that will require a commitment of approximately 2 hours, once every month for 9 consecutive months.

The importance of quality control in the proteomics lab has recently been illuminated in publications by the CPTAC group (e.g., Molecular Cellular Proteomics (2010) Volume: 9, Issue: 2, Pages: 242-254, <http://www.ncbi.nlm.nih.gov/pubmed/19837981>). Most labs have developed their own quality control procedures to assess data acquisition performance but may rarely perform longitudinal analysis to monitor instrument performance and variability.

The goal of our 2012 study is ambitious. We expect to achieve a nine month longitudinal assessment (March 2012 – November 2012) of intra-laboratory instrument performance using regular runs of a digested sample protein mix. Results will provide participants with a performance benchmark within their own lab and will allow the opportunity to see the range of performance metrics from a broad sampling of other similar labs and facilities across the globe.

The goal of the study is not directed toward maximizing protein identifications, or for determining best practices for quality control procedures. Rather, our goal is to obtain a range of metrics to help assess the overall performance of each instrument (HPLC and MS) and the consistency of performance over an extended period *within* labs. Because this study is an intra-laboratory comparison participating laboratories are free to use their standard LC methods with data-dependent MS/MS acquisition settings of their choice. However, the study does require that the method of choice is kept constant during the test period. Together with the sample, participating laboratories will receive recommendations for methods that can be used for the analysis. The PRG anticipates that the samples can be run in any proteomics lab equipped with standard LC-MS/MS instrumentation.

Each participating laboratory will receive lyophilized aliquots of digested protein mixture to last for the duration of the study. Samples will simply require resuspension and LC-MS/MS data acquisition. Each lab is asked to run each sample once per month during course of this study. Data processing and analysis will be provided by the PRG but participants will have to be proficient using ProteoWizard (<http://proteowizard.sourceforge.net/>) to convert raw data to a common format for transfer to the PRG data repository. Detailed instructions will be included with the sample and on a centralized web page.

The PRG anticipates providing an interim report to participants in mid-2012 with a final analysis to be shared at the ABRF meeting in 2013.

To request a sample, please go to: http://www.surveymonkey.com/s/PRG2012_QC_experiment and fill out your shipping information. Samples must be requested prior to January 20, 2012. Because of the significant effort that goes into the preparation and shipping of the samples by the PRG, the research group asks that a sample set only be requested if there is a reasonable probability you will be able to return data each month during the course of the study. Similarly, each participant should only request one sample set. Several spare aliquots can be included to account for unforeseen problems. As in the past, result submissions will be coded to ensure anonymity of the participating laboratories.

We thank you for your support of the ABRF and look forward to your participation in this study.

Sincerely,

The ABRF Proteomics Research Group:

Maureen K. Bunger (Chair) - *North Carolina Central University*

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