



## PRESS RELEASE

Proteome Sciences plc

### **Study Demonstrates Mass Spectrometry Technique Dramatically Enhances Detection of Key Early Stage Alzheimer's Biomarkers.**

*Publication: Journal of Alzheimer's disease*

**For immediate release: 22nd September 2016, Cobham, UK:** A peer reviewed study led by Proteome Sciences plc ("Proteome Sciences"), in conjunction with a group of highly respected universities and hospitals, demonstrates the ability of an innovative mass spectrometry (MS) workflow to dramatically improve the ability to detect tau-derived peptides that are directly related to human Alzheimer's pathology as early stage biomarkers of the disease.

Published on-line in the Journal of Alzheimer's Disease, the study describes the application of the workflow, TMTcalibrator™, for high-sensitivity detection of phosphorylated tau and other disease-relevant biomarkers of Alzheimer's disease (AD) in cerebrospinal fluid (CSF).

The TMTcalibrator™ workflow combines analysis of diseased tissue and body fluids to enhance mass spectrometric detection of tissue-derived biomarkers at unparalleled levels of sensitivity.

Demonstrating this, the study, the first to be published using TMTcalibrator™, reports the detection of 47 tau phosphopeptides covering 31 clinically-relevant phosphorylation sites. In total 76.8% coverage of human tau in CSF was obtained.

Previous attempts to profile phosphorylated tau in CSF using mass spectrometry have been limited to very few sites and based on a prior selection of targets. Using this workflow it was possible to detect different phosphopeptides in an unbiased manner.

Commenting on the study, Dr Ian Pike, Chief Scientific Officer at Proteome Sciences said:

"This study clearly demonstrates the potential of combined tissue and fluid proteomics to discover and validate low abundant, tissue-derived biomarkers in peripheral fluids, which in this case resulted in the widest coverage of both tau and phosphorylated tau in human cerebrospinal fluid.

"Many of the tau peptides showed strong regulation in the three Alzheimer's patients relative to three controls, and these may offer a means to earlier and more accurate diagnosis of the disease in the future."

In addition to the most detailed profiling of CSF tau this study has provided over 100 other regulated proteins, with several whose genes carry mutations that increase the risk of AD, and these data will be reported in subsequent publications.

Other contributors to the study were the University of Gothenburg, Sweden; Sahlgrenska University Hospital, Sweden; University College London, UK; University of Eastern Finland and Kuopio University Hospital, Finland.

**ENDS**

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**Notes for editors:**

**Details of the study:** Comprehensive Quantitative Profiling of Tau and Phosphorylated Tau Peptides in Cerebrospinal Fluid by Mass Spectrometry Provides New Biomarker Candidates. Russell C.L. et al.

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Proteome Sciences performs its proprietary TMTcalibrator™ biomarker discovery services for a range of clients in the pharmaceutical industry. The technology is applicable to all therapeutic areas where diseased tissue and diagnostic body fluids are available.

With its HQ in Cobham, UK and laboratory facilities in London and Frankfurt, Proteome Sciences is a leader in applied proteomics offering high sensitivity, proprietary technologies and workflows in cell signalling pathways (SysQuant®, TMTcalibrator™) and in protein biomarker discovery, validation and assay development.

Proteome Sciences' research has discovered a large number of novel protein biomarkers in key human diseases with a focus mainly in neurological/neurodegenerative conditions and in cancer. It has patented blood biomarkers in Alzheimer's disease, stroke, brain damage and cancers for diagnostic and treatment applications that are available for licenses.

[www.proteomics.com](http://www.proteomics.com)