



L
I
F
E



sciences

Peptide and protein analysis

Thermo Fisher Scientific has published an application note that illustrates the capabilities of dual-pressure, linear ion trap technology for the investigation of proteome dynamics.

The application note assessed the performance of the LTQ Velos ion trap mass spectrometer for the analysis of a complex, multi-organ peptide digest of *Caenorhabditis elegans* (*C. elegans*). The LTQ Velos ion trap mass spectrometer offers improvements in speed and sensitivity, providing greater coverage in the analysis of complex peptide mixtures and increasing the confidence of protein identification at low sample levels. The Novel Dual-Pressure Linear Ion Trap Mass Spectrometer Offers Breakthrough Performance in Proteomics Experiments note is available for download via www.thermo.com/velos462.

Tandem mass spectrometry, particularly using linear ion traps and trap-based hybrid mass spectrometers, has become a leading technology for peptide and protein identification. The preference for this technology is due to its ease of use as well as its superior MS and MS/MS performance. The multiple fragmentation techniques available on the LTQ Velos enable more confident sequence assignment and post-translational modification (PTM) identification. Faster scan rates also significantly reduce cycle times, increasing the number of proteins and peptides identified.

The application note describes an effective method for the analysis of peptides and proteins using the LTQ Velos mass spectrometer. To compare and benchmark performance, the company ran analyses on both a LTQ XL linear ion trap mass spectrometer and a quadrupole time-of-flight (Q-TOF) mass spectrometer. The study used data-dependent tandem acquisition methods and the team separated a proteolytic digest of *C. elegans* using reverse-phase chromatography for each LC-MS/MS run. The analysis revealed that the LTQ Velos identifies ~240% more proteins and ~130% more distinct peptides from a highly complex sample than is possible with the Q-TOF.

Thermo Fisher Scientific

Contact info and more items like this at wf.net.au/C089

Cell signalling analysis

Three FlowCelect kits are now available for benchtop flow cytometry, targeted at key signalling pathways and said to provide the first complete validation for evaluating complex cell signalling events without sending samples to a core laboratory.

The kits enable users, without significant flow cytometry experience, to evaluate pathway activation and cross-talk over time or investigate the correlation between cell signalling events and changes in cell function and health.

The kits measure multiple parameters on hundreds of cells per second and use directly conjugated, phospho-specific antibodies to simultaneously detect protein activation states and cross-talk. Designed for Guava flow cytometry systems, they deliver more detailed information faster than traditional techniques for studying cell signalling, such as western blots, immunohistochemistry or immunocytochemistry.

The kits include all antibodies, buffers and other reagents necessary for the assay and help users define the signal transduction pathways involved in key research areas like cancer and autoimmune diseases.

Millipore Pty Limited

Contact info and more items like this at wf.net.au/C772



Fixed volume micropipettes

Labofix fixed volume micropipettes complete the adjustable volume Pluripet II range and 10 models offer a choice of volume range from 5 to 1000 μ L.

Their features include: autoclavable; suitable in molecular biology, microbiology, immunology, cell culture, analytical chemistry, biochemistry, genetics, etc; CE marked; accuracy and precision; light, ergonomic, built-in, streamlined tip ejector facilitates easy tip ejection and access to narrow-necked bottles and tubes; plastic construction combined with stainless steel piston; individually calibrated as per ISO8655; calibration report included with each pipette.

Sieper & Co Pty Ltd

Contact info and more items like this at wf.net.au/C810

