Waters QTOF Premier

The next generation of Q-Tof™ technology

Introducing Waters® Q-Tof Premier™ Mass Spectrometer, the next generation exact mass API/MALDI MS/MS platform for the Pharmaceutical, Biotechnology and Life Science industries. The Q-Tof Premier Mass Spectrometer, featuring T-Wave™ (Travelling Wave) technology, offers significant enhancements in mass measurement accuracy, dynamic range (pDRE™), sensitivity (Enhanced Duty Cycle) and speed. If you want to quantify, identify and characterize compounds from simple or complex mixtures, Waters Q-Tof Premier offers the finest blend of innovative analytical capabilities for results you'll have the ultimate confidence in. A new analytical paradigm: Ultra Performance Q-Tof LC/MS/MS Waters Q-Tof Premier mass spectrometer is the first compact exact mass LC/MS/MS platform to incorporate ACQUITY Ultra Performance LC™ technology. The ACQUITY UPLC™ system marks an unparalleled breakthrough in separations science, with innovative technologies that enable significant improvements in performance for your application. So if you need to characterize mixtures with the ultimate in resolution, sensitivity and speed or require a simple, easy-to-use, direct nanoflow solution (nanoACQUITY UPLC™) with unparalleled retention time reproducibility, look no further than Ultra Performance Q-Tof LC/MS/MS

Waters® Protein Expression Profiling LC/MS/MS System incorporates
the Q-Tof Premier™ Mass Spectrometer, nanoACQUITY UPLC™ system
as well as MassLynx™, Expression Informatics, and ProteinLynx™ Global SERVER 2.1 software.

The Premier™ Technology Platform

The Q-Tof Premier is a hybrid orthogonal acceleration Time-of-Flight (oa-ToF) mass spectrometer that enables automated exact mass measurement of precursor and fragment ions to yield the highest confidence in structural elucidation and databank search results

The Q-Tof Premier is a high performance platform for MS and MS/MS analyses incorporating:
• High sensitivity—High transmission efficiency of ZSpray™ source technology, T-Wave™ ion optics, T-Wave collision cell and oa-Tof transmission result in high sensitivity
• High resolution—Up to 17,500 FWHM with W-Optics™
• High mass measurement capability—Routine exact mass measurement (3 ppm RMS) in MS and MS/MS with LockSpray™ and NanoLockSpray™
• Enhanced speed—Faster TDC (4 GHZ) delivers acquisition speeds of up to 20 spectra per second—compatible with UPLC-based separations
• Dynamic Range Enhancement (pDRE™)—Equipped with programmable DRE function, which enables quantitation and exact mass measurement over 4 orders of magnitude
• Enhanced Duty Cycle—Enables enhanced sensitivity over targeted m/z ranges for detection of modified components (e.g. in Precursor Ion Discovery™)
• MALDI—Exchangeable vacuum MALDI source enabling large scale MALDI MS and MS/MS analyses—compatible with 96- and 384-spot target plates

IET - Used Lab Equipment - Refurbished Analytical Laboratory Instruments

• Resolving quadrupole—4, 8 and 32k Da options
• m/z range—up to 100,000 in V-Optics™
• Intelligent, automated MS/MS acquisition—Data Directed Analysis™ (DDA™) and Precursor Ion Discovery
• Source options—LockSpray, NanoLockSpray, IonSABRE™, APCI™, ESCi™ and APPI™
• Ergonomics—New industrial design, reduced instrument footprint.

Programmable Dynamic Range Enhancement (pDRE™)

The full mass range spectra produced by the Q-Tof Premier enables a wide range of components, both known and unknown, to be detected from mixtures with high sensitivity. In the characterization of such components, they may be present in a wide range of concentrations. Programmable Dynamic Range Enhancement delivers up to 4 orders of magnitude for exact mass measurement and linear quantitative analysis of complex mixtures.

Enhanced Duty Cycle

The characterization of candidate drugs and biomolecules requires the detection and structural elucidation of modifying groups, which are frequently present at low abundance. Precursor Ion Discovery can be used to target your MS/MS analyses for modified components by automatically monitoring for diagnostic product ions. By synchronizing the operation of the T-Wave collision cell with the oa-ToF analyzer, the instrument duty cycle can be significantly enhanced, resulting in higher sensitivity for the selected product ion of interest.

MALDI MS and MS/MS

Sequence coverage in proteomics studies can be increased by employing both MALDI and Electrospray Ionization. The Q-Tof Premier can be configured with an optional vacuum MALDI source enabling MS and MS/MS analyses to be carried out easily with high resolution, sensitivity and mass measurement accuracy

The high quality MALDI/MS/MS data produced by the Q-Tof Premier enables:
• An increase in protein identifications and protein
sequence coverage

• Elimination of false positive protein identifications
apparent in nominal mass data

• Significant improvement of *de novo* sequencing
compared to post-source decay (PSD) techniques

Chromatography-based columns and reagents
Speed and sensitivity are optimized by choosing the correct column and extraction products.

• ACQUITY Ultra Performance LC™ Columns—ACQUITY UPLC columns incorporate Waters'
patented 1.7 μm Hybrid Particle Technology (HPT) and offer high efficiency, pressure

tolerant, second-generation hybrid materials. Featured in the ACQUITY UPLC column is an
eCord™ that records the number of injections, backpressures and temperature fluctuations
of the column, and carries the Waters Certificate of Analysis.

• Symmetry® and Symmetry300™ Columns—To meet your LC/MS method development
needs, Symmetry columns provide the highest standard of "column-to-column" reproducibility
with unmatched peak symmetry for maximum sensitivity and accurate quantification.

• Atlantis™ Columns—Atlantis columns are a difunctionally bonded, silica-based C18 offering
that combines superior polar compound retention with exceptional peak shape and full
LC/MS compatibility.

• XTerra® MS Columns—XTerra MS columns, based on a combination of our most inert
particle and trifunctional reversed-phase bonding technology, are ideally suited for mass
spectrometry applications.

• NanoEase™ and nanoACQUITY UPLC™ Columns—A complete series of capillary, nano, and
trapping column technologies to effectively capture, concentrate, and separate peptides and
other biological compounds in either 1D or 2D LC or LC/MS applications.

• RapiGest™ SF—An enabling HPLC and LC/MS-friendly surfactant for qualitatively improved
"in-gel" and "in-solution" protein digestions.

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