Agilent 6224 Accurate-Mass TOF LC/MS

Exceptional MS performance without compromises

Introduction/Abstract

The Agilent 6224 Accurate-Mass Time-of-Flight (TOF) LC/MS system provides the unmatched confidence of Agilent's True High-Definition TOF (True Hi-Def TOF) technology delivering exceptional sensitivity, excellent mass accuracy, fast data acquisition, and streamlined qualitative and quantitative analyses. In addition, the advanced analytical capabilities of Agilent's leading edge MassHunter Workstation software ensures superior data mining and analysis capabilities to meet your most challenging research needs.

Agilent 6224 Accurate-Mass TOF LC/MS integrates Agilent True Hi-Def TOF technology and MassHunter Workstation software for sensitive, accurate-mass MS analyses.

Agilent Technologies

Sensitive, Accurate-Mass MS Analyses

The Agilent 6224 Accurate-Mass TOF LC/MS system is designed to provide superior data quality and advanced analytical capabilities for profiling, identifying, characterizing, and quantifying low molecular-weight compounds and biomolecules with confidence. Integrating core Agilent technical innovations—True Hi-Def TOF technology and MassHunter Workstation software—the 6224 TOF platform is ideally suited for accurate-mass analyses of complex samples encountered in today's most demanding applications.

True Hi-Def TOF Technology for Exceptional Mass Accuracy, Sensitivity and Speed

Agilent True Hi-Def TOF technology, a key feature of Agilent's 6200 Series TOF LC/MS instruments, delivers outstanding TOF performance characteristics without any performance compromises.

- Sub 1-ppm mass accuracy improves confidence and reduces false positives
- > 20,000 mass resolution distinguishes target analytes from interferences
- Up to 5 orders of in-spectrum dynamic range improves detection of trace-level targets in the presence of high abundant compounds
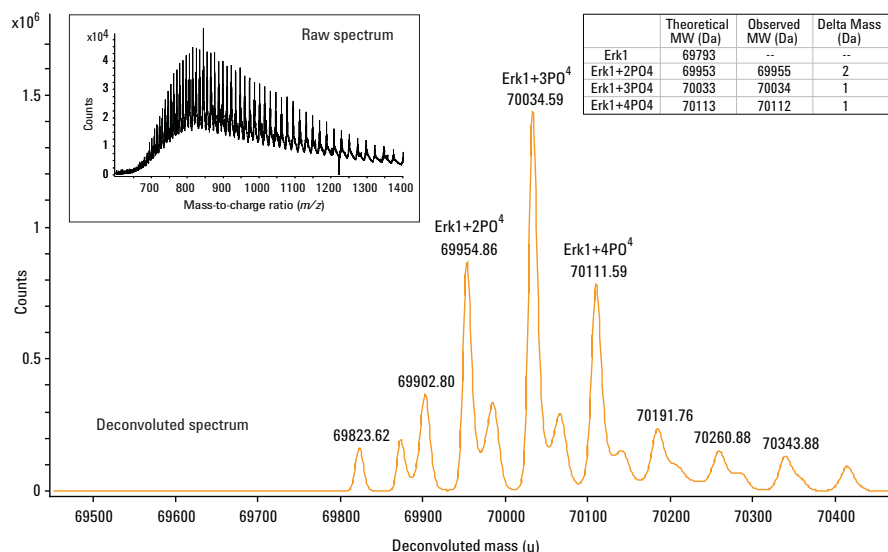
- Low picogram sensitivity enables identification of very low-abundance compounds
- Fast data acquisition rates of up to 40 spectra/second ensure maximum compatibility with fast LC and high-throughput methods
- Wide mass range to 20,000 m/z

Easily find impurities, degradation products, and rapidly screen for target compounds

Whether you are analyzing impurities or searching for degradation products in stability studies, the 6224 Accurate-Mass TOF lets you get the job done faster, easier, and with fewer analyses. The wide in-spectrum dynamic range ensures detection and accurate-mass measurements of low-abundance impurities, even in the overwhelming presence of native compounds. With ultra-fast acquisition of full spectra, and superior mass accuracy and resolution, you can confidently screen for hundreds of compounds such as pesticide residues or drugs of abuse, even in the most complex matrices. Agilent's MassHunter Workstation software automatically locates sample components and searches your database of target compounds, giving you results in minutes.
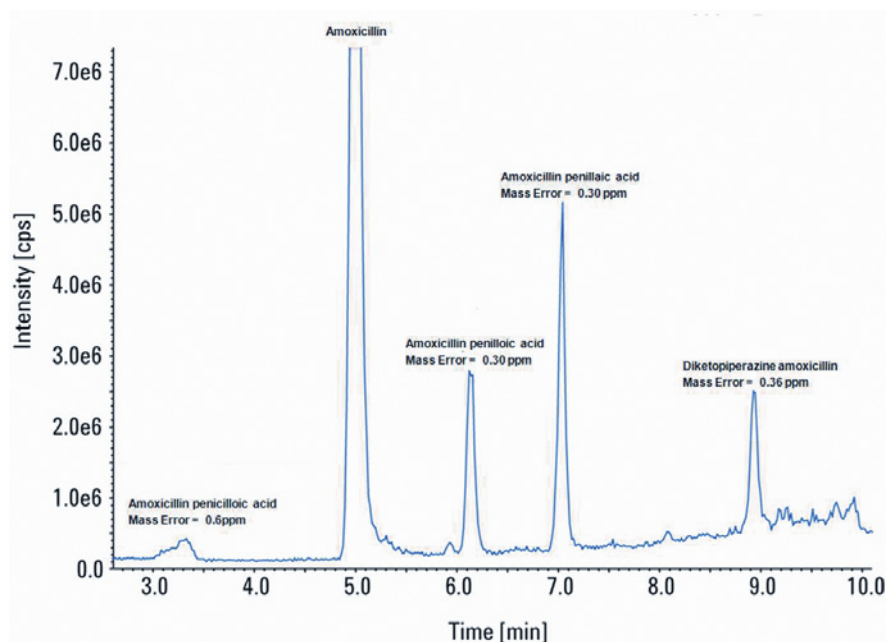
Faster, easier impurity analysis. Base peak chromatogram of the degraded amoxicillin sample. Sub 1-ppm mass accuracy made it easy for the molecular formula generation (MFG) algorithm to produce the correct molecular formulae of several amoxicillin degradants.

	Theoretical MW (Da)	Observed MW (Da)	Delta Mass (Da)
Erk1	69793	--	--
Erk1+2PO4	69953	69955	2
Erk1+3PO4	70033	70034	1
Erk1+4PO4	70113	70112	1

Positive confirmation of intact proteins. In this analysis of a sample of the ~70 kDa extracellular signal-regulated kinase 1 (Erk1) protein, the 6224's outstanding mass resolution easily resolves three phosphorylation states and reveals the presence of additional isoforms.

Designed for the Most Demanding Applications

The Agilent 6224 Accurate-Mass TOF LC/MS system delivers exceptional MS analyses for applications that demand the highest accurate-mass measurements, without compromising sensitivity and speed. Powerful new data mining tools in MassHunter Workstation software facilitate profiling, characterization, identification and quantification of compounds in complex mixtures. These performance characteristics enable the 6224 TOF system to support demanding applications such as proteomics, metabolomics, impurity testing, product degradation studies, forensics, food safety, and environmental analyses.

MassHunter Workstation Software for Powerful Data Mining and Analysis Capabilities

Agilent's MassHunter Workstation Software facilitates faster and easier processing of information-rich data generated by the 6224 Accurate-Mass TOF LC/MS. Compound-centric data mining and navigation capabilities enable efficient analyses of complex MS data. A sophisticated molecular feature extraction algorithm automatically retrieves all spectral and chromatographic information for each component in a sample mixture, including those in overlapping and co-eluting peaks, thereby saving hours of analysis time. MassHunter's integrated mass profiling tools streamline differential and statistical analyses between sample sets. The software can be used to perform additional processing steps such as molecular formula generation, database or library search, deconvolution, isotope pattern matching or charge-state determination for confident compound identification.

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