Sensitivity, mass accuracy, and legendary Agilent reliability

Agilent 6510 Quadrupole Time-of-Flight LC/MS

Unambiguous compound identification is essential to applications as varied as biomarker discovery, protein characterization, PTM analysis, metabolite identification, and analysis of pharmaceutical impurities. The Agilent 6510 Q-TOF LC/MS combines the rich structural information of MS/MS with the confidence of 2-ppm mass measurements to achieve positive compound identifications that will stand up to the strictest scrutiny. It does so with unprecedented sensitivity, and with an ease-of-use and reliability rarely found in research-grade mass spectrometers.

Unprecedented performance in a Q-TOF mass spectrometer

Regardless of the application, the Agilent 6510 Q-TOF LC/MS delivers MS/MS with the exceptional mass accuracy and sensitivity you need to make your research successful:

• Identify low-abundance biomarkers, impurities, and metabolites with attomole-level, on-column sensitivity

• Increase analytical confidence with routine, 2-ppm mass accuracy

• Simultaneously detect low- and high-abundance compounds thanks to 3–4 orders of in-spectrum dynamic range

• Detect narrow chromatographic peaks and identify unresolved components using fast spectral acquisition and data-dependent MS/MS

• Get maximum performance with minimum effort thanks to automated tuning and automated, continuous internal reference mass correction

Agilent Technologies

Revolutionary performance, usability, and productivity

The Agilent 6510 Quadrupole Time-of-Flight LC/MS sets the industry standard for Q-TOF performance. Its unsurpassed combination of sensitivity, mass accuracy, and in-spectrum dynamic range is enhanced by superior ease of use and reliability to maximize both the quality of your results, and your productivity.

Sensitivity without compromise

Unlike other Q-TOF systems, the 6510 does not require that you compromise spectral acquisition speed or mass accuracy to achieve the best sensitivity.

With a 10X sensitivity advantage over competing Q-TOF systems, you detect critical low-level sample components that are out of reach on other instruments. At the same time, you can acquire one MS and five MS/MS spectra per second, for more structural information from complex samples with co-eluting components. Simultaneous low-ppm mass accuracy provides added confidence in your results.

**Non-routine mass accuracy—now achieved routinely**

Spend time running samples, not adjusting your mass calibration. The

6510 Q-TOF provides 2-ppm MS and 5-ppm MS/MS mass accuracy that is exceptionally stable. Get started quickly with automatic tuning and calibration for fast, repeatable optimum performance. Maintain mass accuracy effortlessly with automated, continuous introduction of an internal reference mass standard. With 3–4 orders of in-spectrum dynamic range, the 6510 Q-TOF delivers accurate mass measurements across a wide range of sample concentrations. There is no need to re-run samples.
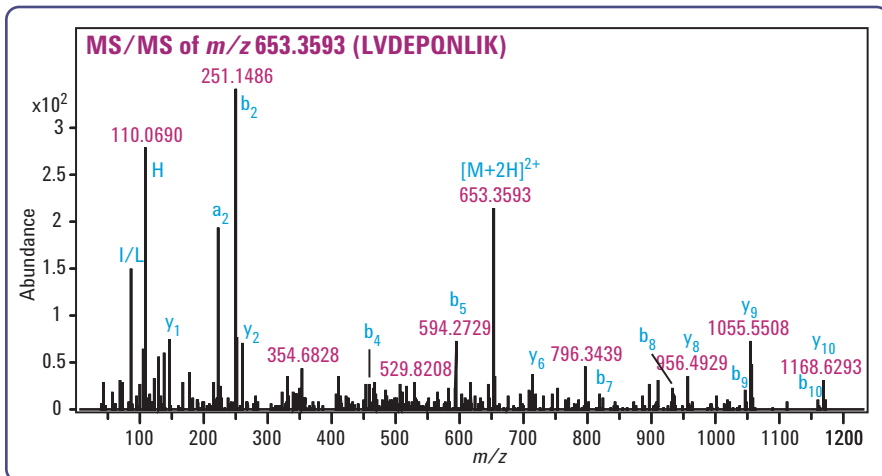
Targeted MS/MS analysis of a doubly charged fragment from 300 attomoles of BSA digest on column shows both the doubly charged precursor ion and abundant b- and y-series fragment ions for exceptional structural information

MS/MS spectrum from a precursor ion from 1.11 µM hexakis (1H, 1H, 3H-tetrafluoropropoxy) phosphazine infused at 25 µL/min demonstrates outstanding mass accuracy across a wide mass range
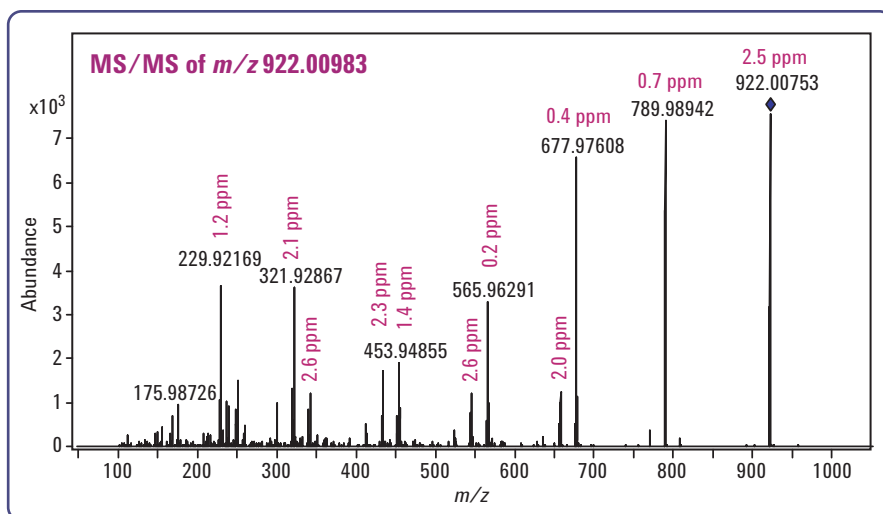
All new, totally integrated software

The all-new Agilent MassHunter Workstation software simplifies operation and maximizes productivity.

Faster setup and easier data acquisition

MassHunter data acquisition software is all about ease of use and acquiring the best possible data.

- The ability to import worklists from spreadsheets can save setup time
- Fully automated tuning and internal reference mass correction maximize sensitivity and mass accuracy while minimizing effort
- Integrated control of Agilent 1200 Series LC modules and the 6510 Q-TOF simplifies operation
- Targeted or data-dependent MS/MS to meet the widest range of application needs

**Enhanced productivity with compound-centric data mining**

The MassHunter qualitative data analysis software sets the industry standard for productivity and ease of use.

- Proprietary feature extraction and correlation algorithms find sample components in the most complex MS data
- Compound-based data browsing and navigation organizes results and ensures that they are accessible
- Processed results can be saved and reloaded so you never need to start over
- Use of industry standards and open architecture enables straightforward integration into existing IT environments

Application-specific software greatly speeds sample processing

Additional, application-specific software saves hours and days of data processing:

- Spectrum Mill for MassHunter Workstation software identifies proteins by fast, accurate database searching and also measures relative protein abundances
- MassHunter Profiling software facilitates biomarker discovery, molecular profiling, and impurity analysis through expression profiling
- MassHunter Bioconfirmation software confirms identities of recombinant proteins and synthetic peptides
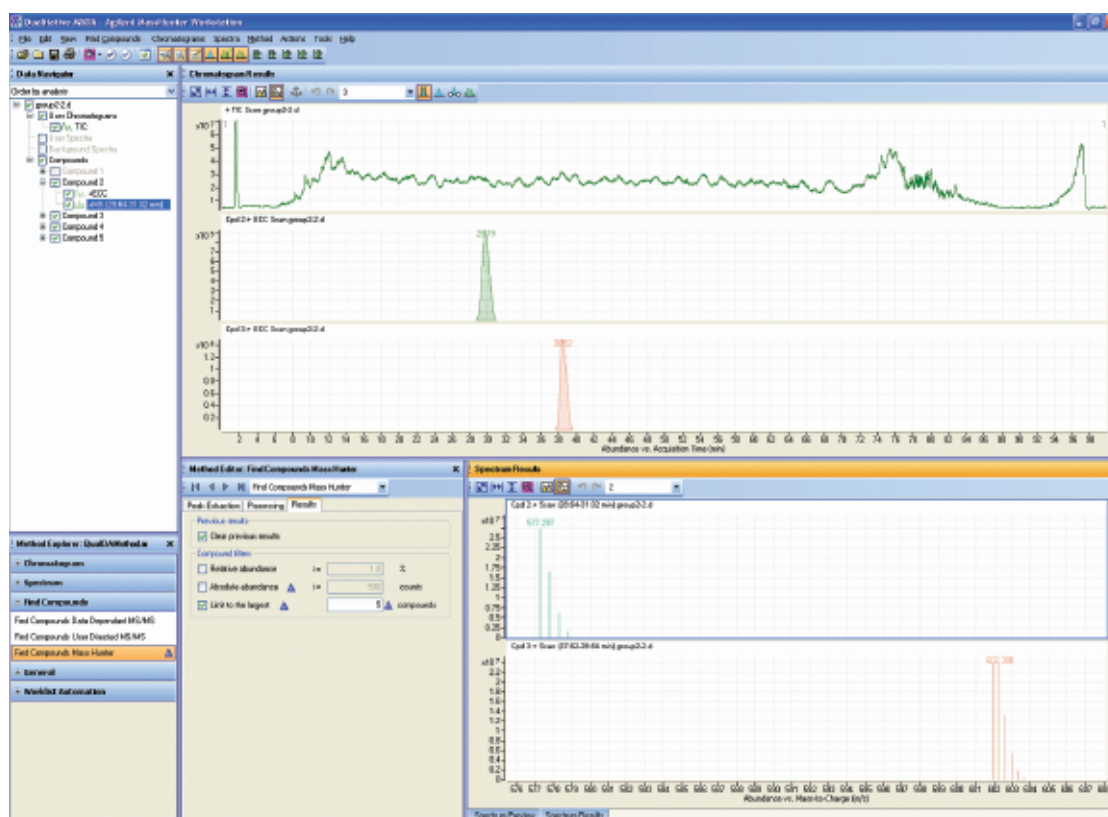
All-new MassHunter qualitative data analysis software finds the most abundant components in an extremely complex tryptic digest of *E. coli,* and displays both the extracted ion chromatograms and MS spectra

Superior chromatography for better LC/MS/MS analyses

Agilent's new 1200 Series LCs offer unprecedented stability and repeatability at every flow rate—exactly what you need to achieve the best possible separations and maximize the performance of your 6510 Q-TOF.

1200 Series LCs set new standards for chromatographic performance and reliability

Easy, reproducible, nanoflow separations

Agilent's revolutionary HPLC-Chips integrate LC nanocolumns and MS electrospray components into a polyimide chip the size of a microscope slide. HPLC-Chips provide superior separations at the nanoliter flow rates that enhance MS sensitivity. The HPLC-Chip Cube MS interface automates chip handling, positioning, and connections to ensure maximum performance with minimum effort. HPLC-Chip/MS technology is especially beneficial in the analysis of proteins and glycoproteins, and Agilent's 6510 Q-TOF is the only Q-TOF system available with this technology.

Agilent HPLC-Chip/MS technology provides superior separations and maximizes both MS sensitivity and operational convenience

Widest range of ionization technologies maximizes versatility

For maximum versatility, the 6510 Q-TOF can be equipped with a wide range of high-performance ionization sources. Besides the groundbreaking HPLC-Chip/MS technology, the 6510 offers:

- Electrospray (ESI) for multiple flow rates
- Atmospheric pressure chemical ionization (APCI)
- Multimode simultaneous ESI and APCI for maximum throughput, versatility, and convenience
- Atmospheric pressure photoionization (APPI)
- MALDI with Agilent's unique pulsed-dynamic focusing
- ESI, APCI, multimode, and APPI sources compatible with capillary electrophoresis (CE)

For more information

Learn more:
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