



Agilent 6000 Series LC/MS Systems

Mass Spec/tacular

performance, productivity and reliability.

Our measure is your success.

products | applications | software | services



Agilent Technologies

A spectacular LC/MS lineup!

If you're looking for more sensitive target compound analysis and better identification of unknowns, take a close look at Agilent's comprehensive LC/MS portfolio. With a 37-year track record of relentless innovation and groundbreaking contributions to MS technology, we deliver everything you expect from a mass spectrometry leader:

- A broad portfolio of industry-leading LC/MS systems—Single Quadrupole, Ion Trap, Triple Quadrupole, TOF and Q-TOF
- Leading HPLC and RRLLC instruments and columns to exactly match your lab's analysis needs and your budget
- Outstanding data quality to enhance your results, and your confidence
- Intelligent, easy-to-use software to help every user achieve expert results, every time
- 24/7 Agilent reliability to maximize your lab's uptime and productivity
- The industry's widest range of ionization sources—all of them easily interchangeable—so you can ionize and measure almost all compound classes

To ensure superior results—and maximum value—Agilent offers a unique combination of best-in-class LC technology, exceptional MS spectral quality, powerful data analysis tools and optimized, single-source workflow solutions that address a full range of qualitative and quantitative applications. You'll find us right at the center of key applications such as:

- **Environmental analysis**
- **Food Safety analysis**
- **Proteomics**
- **Metabolomics**
- **Pharmaceutical and biopharmaceutical QA/QC**
- **Drug discovery and development**



Combined with Agilent's industry-leading analytical HPLC and RRLLC systems, our Single Quadrupole, Ion Trap, Triple Quadrupole, TOF and Q-TOF LC/MS solutions combine world-class performance with legendary reliability and ease-of-use.

1200 Series LC: Faster separations, higher productivity.

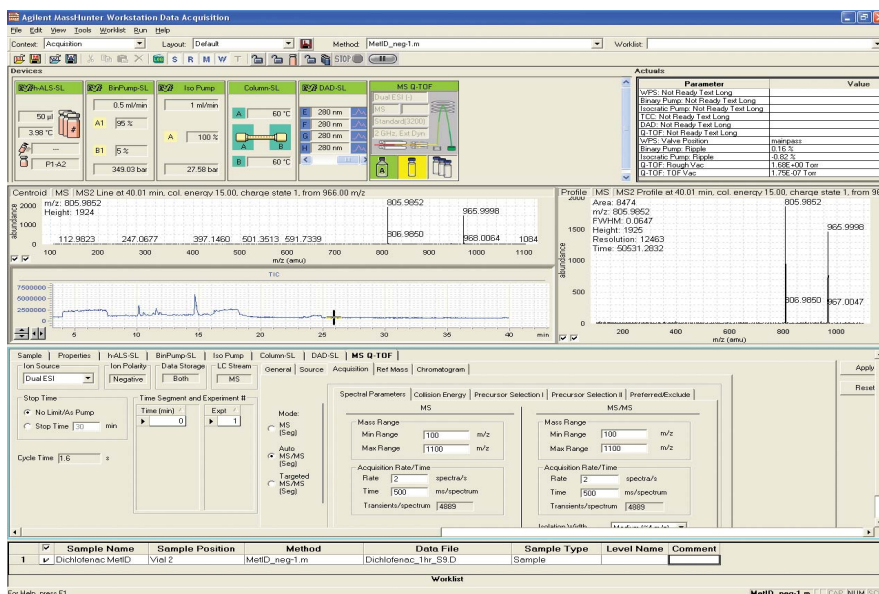


1200 Series Rapid Resolution LC. Agilent 6000 Series mass spectrometers integrate seamlessly and are perfectly matched with our 1200 Series LC to deliver exceptional results—routinely.



Innovative HPLC-Chip technology. The Agilent 6000 Series is fully compatible with our innovative HPLC-Chip technology—a plug-and-play alternative to complicated nanoflow LC separations. HPLC-Chip MS systems deliver robust, ultra-sensitive results from small sample volumes. (Page 6)

MassHunter Software: Intuitive method set-up and compound-centric analysis.



Consistent software across all MS platforms improves productivity by shortening learning curves and reducing training costs. Powerful MassHunter software makes it easy for all users to tap into the full capabilities of Agilent 6000 Series mass spectrometers. The intuitive user interface enables powerful compound-based data navigation, advanced data mining and fast, nearly effortless quantitation. (Page 7)

Agilent 6100 Series Single Quad

Unprecedented performance and proven day-after-day reliability



From routine QC to research-level applications, Agilent 6100 Series Quadrupole LC/MS systems offer industry-leading data quality in an easy-to-use, space-saving benchtop package.

- **Faster acquisition speeds** let you take full advantage of the accelerated throughput of today's faster RRLC chromatography.
- **Ultra-fast ion polarity switching** lets you obtain both positive and negative spectra (up to 20 spectra/second), providing maximum information from a single injection—even with second-wide LC peaks.
- **Faster injection-to-injection cycle time**—less than 10 seconds—lets you run more samples per hour.

Agilent 6300 Series Ion Trap

Robust, intelligent data-dependent MSⁿ



Available in a range of configurations tailored to your lab's analysis needs, Agilent 6300 Series Ion Trap systems deliver sensitive, data-dependent MS/MS that makes structural confirmation and sample identification faster and easier.

- **10x greater ion storage capacity and 2x faster scan speeds** enhance compound identification in complex samples.
- **Automated, data-dependent MS/MS and MSⁿ** maximize the amount of high-quality data from a single run, increasing the number of compounds identified.
- **Optional Electron transfer dissociation (ETD) improves peptide fragmentation** and allows PTMs such as phosphorylation to be more easily identified and located.

Agilent 6200 Series Accurate-Mass TOF

The unmatched confidence of True Hi-Def TOF technology



In the 6220 system, Agilent's True Hi-Def TOF technology brings together complementary technologies and proprietary engineering innovations to achieve TOF performance that measurably surpasses any other TOF system—and even rivals or exceeds more expensive FT-MS and orbitrap technologies.

Whether you are confirming synthetic compounds, profiling biomarkers, identifying impurities, screening for pesticides or characterizing intact proteins, the Agilent 6220 Accurate-Mass Time-of-Flight LC/MS delivers unmatched speed and performance in a compact benchtop instrument.

- **Sub-1 ppm typical mass accuracy** improves confidence and reduces false positives.
- **Resolving power of 20,000** distinguishes target compounds from interferences.
- **Data acquisition rates up to 40 spectra per second** assure maximum data quality and compatibility with fast chromatography and high-throughput workflows.
- **Up to five orders of in-spectrum dynamic range** reveal trace-level targets even in the presence of vastly more abundant compounds.
- **Low-picogram on-column sensitivity** finds impurities or biomarkers at extremely low concentrations.
- **Exceptionally accurate intact protein MW determinations** allow rapid QC of recombinant biotherapeutics.
- **Automatic tuning and effortless delivery of an internal mass calibration sample** assure consistent mass accuracy and reliable molecular weight confirmation.

Agilent 6500 Series Accurate-Mass Q-TOF

The power of accurate-mass MS and MS/MS



With the addition of Agilent Jet Stream Thermal Gradient Focusing technology, the new Agilent 6530 system becomes the world's most sensitive Q-TOF. Using True Hi-Def TOF technology, the system delivers unsurpassed mass accuracy—typically as good as 1–2 ppm MS and 2–4 ppm MS/MS—for unambiguous structural elucidation and target identification.

Using the power of True Hi-Def TOF technology, the Agilent 6510, 6520 and 6530 Accurate-Mass Q-TOFs achieve an unmatched combination of mass accuracy, mass resolution, sensitivity, in-spectrum dynamic range and speed. Offering typical MS and MS/MS mass accuracies that rival or exceed more expensive orbitrap mass analyzers, the 6500 series LC/MS systems give you the capabilities you need to profile, identify, characterize and even quantitate most drug target, food contaminant, proteomic or metabolomic analysis samples.

- **1–2 ppm MS and 2–4 ppm MS/MS typical mass accuracy dramatically increase confidence** in small molecule ID and reduce false positive rates in protein database searches.
- **Enhanced mass resolution**—especially at lower masses—gives you confidence that you're seeing all the mass peaks of interest.
- **Superior attomole-to-low-femtomole sensitivity** helps you identify even very low-abundance compounds.
- **Up to 5 orders of in-spectrum dynamic range** improve detection of low-abundance compounds in the presence of higher-abundance matrix.
- **Spectral acquisition rates of up to 20 MS or 10 MS/MS spectra per second** let you take advantage of the LC throughput gain of Agilent RRLC and HPLC-Chip separations.
- **Broad mass range of 25–20,000 m/z**, enables detection of small molecules, peptides or intact proteins.

Agilent 6400 Series Triple Quadrupole

Unprecedented sensitivity improves your quantitative results—every day



Agilent 6460 system delivers routine femtogram sensitivity—6x better than previous-generation instruments, and best-in-class of any available triple quad. The new standard for highest triple quad sensitivity!

Whether you choose the workhorse 6410 system or the breakthrough 6460, you can expect industry-leading sensitivity, productivity and value from Agilent's 6400 Series Triple Quadrupole systems.

The new 6460, with Agilent Jet Stream Thermal Gradient Focusing technology, achieves dramatic sensitivity gains and is the first triple quad to break the femtogram detection barrier. The choice for today's most demanding applications, it provides maximum sensitivity for the analysis of pharmaceutical drug candidates, trace-level environmental or food contaminants, metabolites and biomarkers.

- **Femtogram sensitivity—regardless of application.** Maximized ion generation and transmission across a broad mass range ensure low limits of detection and quantitation for the widest range of sample types.
- **Fast, sensitive MRMs.** An innovative collision cell design avoids experimental cross-talk and memory effects even at very short dwell times, enabling the analysis of large multi-analyte panels, such as pesticides in food or targeted protein quantitation.
- **Extended linear dynamic range** ensures more reliable, more robust assays.
- **Automated method development and optimization.** MassHunter Optimizer Software automatically finds optimal transitions and determines fragmentor and collision energies, and selects the best possible conditions to maximize sensitivity for each compound.

Better LC/MS results start with industry-leading LC performance.

The superior performance and productivity of your 6000 Series LC/MS starts with achieving the best possible separations, as fast as possible. Agilent's 1200 Series RRLC platform delivers on both counts. The system provides remarkable resolution, sensitivity and precision at all flow rates, over a wide range of mobile phases. Combined with Agilent's 2nd-generation ZORBAX RRHT 1.8 μm columns, it lets you analyze samples faster than ever, with enhanced separation performance that reveals details you've never seen before.

- Up to 20x faster than conventional LC
- 60% higher resolution for higher data quality
- Optimum support of LC/MS on narrow-bore columns by low-delay volume configuration (120 μL)
- Fully compatible with conventional LC methods
- New near-zero carry-over autosampler

Agilent 1200 Series RRLC and Nanoflow LC systems
deliver LC performance perfectly in tune with our
6000 Series mass spectrometers.



Easy-to-use Agilent HPLC-Chip: maximum sensitivity for low-level samples.

Working seamlessly with the 1200 Series Nanoflow LC, Agilent's revolutionary HPLC-Chip integrates the sample enrichment and separation columns of a nanoflow LC system with the intricate connections and nanospray tip used in electrospray mass spectrometry—all on a single, reusable microfluidic chip about the size of a microscope slide.

Solvent and sample delivery to the chip, high-pressure switching of flows and automated chip loading and positioning in the MS source are accomplished by Agilent's HPLC-Chip Cube MS interface. An embedded RF tag tracks usage and operating parameters.

- Highest sensitivity ensures low-level sample fidelity
- Enhanced retention time reproducibility
- Narrower, better-defined peaks reduce MS complexity for more confident compound identification
- Reusable chips are available in multiple functionalities to enable easy, interchangeable workflows with minimum downtime and maximum productivity

Agilent HPLC-Chip
and Chip Cube interface



MassHunter software simplifies and speeds up every analysis.

From instrument tuning to final report, Agilent's MassHunter Workstation software was designed to make all your MS analyses faster, easier and more productive. The software provides a single acquisition platform for Agilent LC/MS TOF, Q-TOF and triple quad instruments—and a single, consistent data processing package for all your Agilent 6000 series LC/MS systems.

MassHunter software incorporates advanced feature extraction, data mining and data processing tools that let you rapidly and accurately extract all available information from the compounds in your samples, as well as leverage the high information content of accurate-mass MS and MS/MS data.

Software and services that support the regulated lab

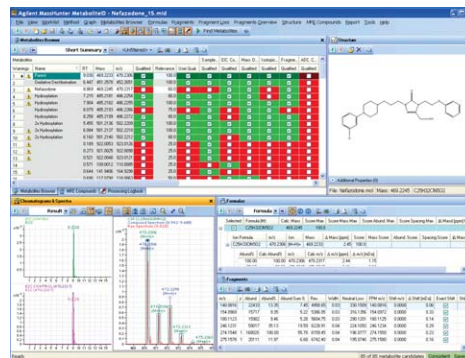
MassHunter software provides comprehensive tools to help you address the requirements of GLP/GMP and 21 CFR Part 11 compliance. Agilent also offers a complete suite of Installation and Operation Qualification services to shorten the time between installation and running critical samples.

Complete integration with your applications and your workflows

"Compound-centric" data processing and intuitive, workflow-driven navigation shorten the path between raw analytical results and the answers you're looking for. One easy-to-learn interface handles not only your basic qualitative and quantitative analysis tasks, but also integrates seamlessly with application-specific software.

Spectrum Mill for MassHunter Workstation quickly identifies proteins and peptides via fast database searches, and provides automatic and manual match validation. The software also supports both label-free and stable-isotope-based quantitation strategies with superior visualization tools.

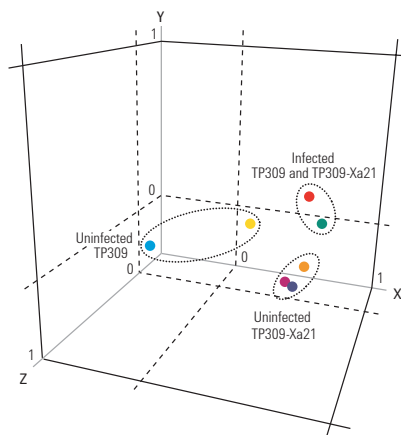
MassHunter Metabolite ID software offers the widest selection of algorithms available in the industry, allowing you to find and confirm expected metabolites via accurate mass, isotope pattern and mass defect.



METLIN Personal Metabolite Database software

includes over 15,000 endogenous and exogenous metabolites, as well as di- and tripeptides. With Agilent's personal database, your searches remain completely confidential; you can also customize by adding proprietary compounds and/or retention times.

GeneSpring MS software is a unified, easy-to-use platform for differential sample analysis that lets you import, normalize and compare data from large sample sets and complex experimental designs, to answer the complex biological questions targeted by metabolomics and proteomics studies.



NEW Agilent Jet Stream Thermal Gradient Focusing Technology* shatters the femtogram barrier

This technology uses revolutionary thermal gradient focusing to enhance nebulization and desolvation, delivering more ions to the mass analyzer while simultaneously reducing the number of neutral solvent clusters. The result is stronger signals with lower RSDs at the limit of detection.

** Available on NEW 6460 Triple Quad and 6530 Accurate Mass Q-TOF systems*

Cross-platform technology adds to your productivity

All of Agilent's LC/MS platforms have a lot in common. They all share a consistent interface, so the learning curve is shorter and training cost is reduced. Other shared technology—such as the collision cell in the Q-TOF and triple quad instruments—lets you set up MRM experiments on one instrument, and simply move them over to another. And interchangeable ion sources assure repeatable, consistent ion formation, no matter which platform you're working on.

Choose Agilent LC/MS with confidence.

Whatever your LC/MS needs, our integrated portfolio of instruments, applications, software and industry-leading services can help your lab generate better results, faster than ever. From our rugged single quad systems to our most advanced triple quad and Q-TOF instruments, we're committed to giving you the performance you're looking for, and the legendary reliability you expect from Agilent.

For more information

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U.S. and Canada

1-800-227-9770

agilent_inquiries@agilent.com

Europe

info_agilent@agilent.com

Asia Pacific

adinquiry_aplsc@agilent.com

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