



High-resolution quant and qual

AB SCIEX TripleTOF™ 5600 SYSTEM

High resolution qual and quant on one platform

The AB SCIEX TripleTOF™ 5600 System is the first accurate-mass, high-resolution LC/MS/MS system for qualitative analysis that has the speed and sensitivity to deliver quantitation like a high-performance triple quad.

- High sensitivity for quantitation at low abundance levels
- SmartSpeed™ 100 Hz Acquisition collects 100 spectra/second
- Dynamic range of greater than 4 orders of magnitude
- EasyMass™ accuracy of 1ppm over 24 hours with external calibration
- Resolution of 25,000 FWHM at low mass, m/z 100 and up to 40,000 at m/z 950, at 100 spectra/sec
- Industry-first 3 year warranty

Achieve speed, resolution and sensitivity simultaneously and with no compromise.

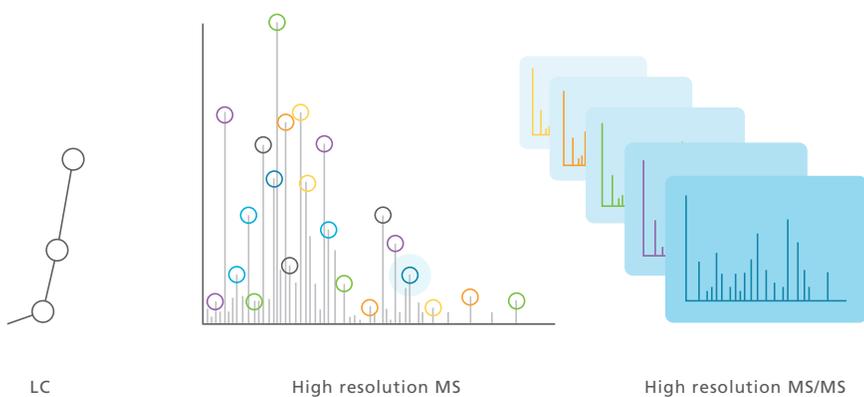
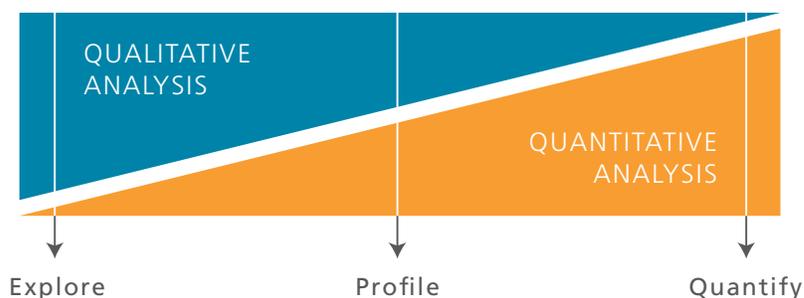
“Among the most important developments in mass spec technology in years”

GERARD HOPFGARTNER, UNIV. GENEVA



One system, flexible workflows

For the first time, Pharma, Academic and Analytical Testing scientists can integrate comprehensive qualitative exploration, rapid profiling, and high-resolution quantitation workflows on a single platform providing faster and more accurate answers to “what is in the sample, how much is there, and does it change?”

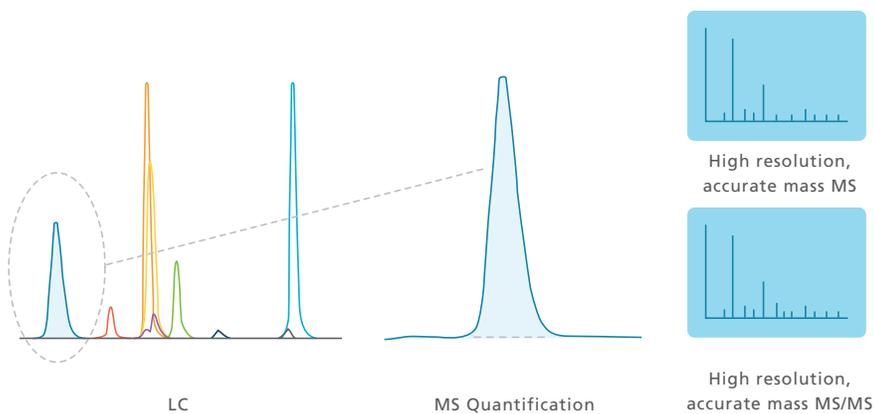


EXPLORE

Explore complex samples in greater depth: Select up to 50 precursors – and generate high resolution and high mass accuracy MS/MS spectra in a second using powerful IDA (information-dependent acquisition) algorithms and high-resolution, accurate-mass MS and MS/MS.

Speed and resolution for definitive identification

- Select up to 50 precursors and get high resolution MS/MS in a second for fast LC conditions
- Identify precursors with confidence with high mass accuracy in MS and MS/MS mode
- Target analyte classes with advanced IDA (information-dependent acquisition) workflows
 - > Multiple mass defect scanning
 - > Neutral loss scanning
 - > Exclusion / Inclusion lists / Isotope pattern matching
- Identify unknowns with robust, intelligent multiple collision energy workflows

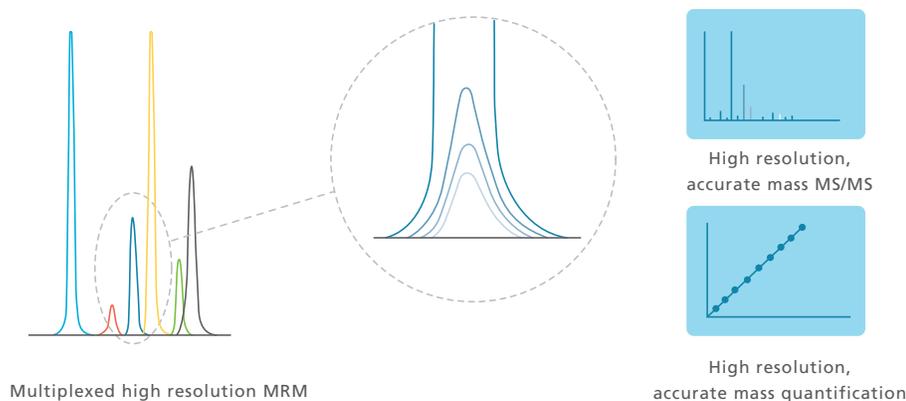


PROFILE

Profile samples for quant and qual in a single run: Quantify virtually every compound in the sample with high-resolution MS quantification and fast chromatography; confirm compound identity with high-resolution, accurate-mass MS/MS; then mine the data for the information you need.

Quantitative and qualitative information in a single run

- Combine high-resolution MS quantification with high-resolution MS/MS ID confirmation
- Quantify every compound—even under fast LC conditions
- Re-visit data for further interrogation



QUANTIFY

Quantify analytes with High Resolution MRM for highest specificity and confidence: Obtain high-resolution at high mass and low mass in the same spectrum for high-resolution MRM-like quantification. LOQ's and dynamic range are equivalent to high-performance triple quad instruments. Cycle times as low as 10 msec generate superior peak definition even with fast LC separations. Quantification requires little optimization, and you can choose multiple fragments per precursor from the acquired full scan MS/MS data.

Relative & absolute quantitation with high resolution MRM (MRM^{HR})

- Maximize specificity using MRM-like quantitation with high resolution fragment ions
- Analyze many analytes with triple quadrupole MRM acquisition rates and collect full scan MS/MS spectra for each precursor without additional cycle time
- Maintain fast cycle time for superior peak definition, even in fast LC separations
- Linear dynamic range of 4 orders or greater for quantitative accuracy

Inspired engineering

Beginning with the best-in-class quantitative performance of the Triple Quad™ 5500 System, AB SCIEX researchers developed the new AcceleratorTOF™ Analyzer to deliver high resolution at the speed and sensitivity required to maintain the precision and limits-of-quantitation associated with MRM. The result is the breakthrough AB SCIEX TripleTOF™ 5600 System – the next generation in Quadrupole TOF technology.



Automated Calibrant Delivery System



DuoSpray™ source



QJet® Ion Guide

Automated Calibration Delivery system allows easy, automated instrument calibration from a reference spray using the DuoSpray™ source.

Software selectable dual ionization system with the DuoSpray™ source – ESI and APCI – provides experimental flexibility with highest performance.

- > TurbolonSpray® Probe 5-3000 µL/min
- > APCI Probe 50-3000 µL/min
- > System also compatible with Turbo V™ source and NanoSpray® III source with heated interface

Patented QJet® Ion Guide improves ion containment and operates at high pressure, providing better collisional focusing and improved ion transmission.

MagLev turbo pumps provide ultimate robustness with silent running magnetic levitation technology.

Next generation eQ™ electronics enable faster scan speeds with improved sensitivity and robustness.

Patented Q0 High Pressure Cell collisionally focuses ions for maximum transmission and sensitivity.

LINAC® collision cell increases speed of analysis and eliminates cross-talk. True collision induced fragmentation provides reliable, information-rich, library searchable spectra.



- 40 GHz four channel TDC and Detector provide highest sampling speeds and maintains high resolution – even at low mass
- 30kHz Accelerator for highest acquisition rate
- New entrance optics improves ion beam focusing post LINAC

New Accelerator TOF™ Analyzer
improves resolution and sensitivity

- 15kV acceleration voltage for higher sensitivity and resolution
- High transparency grids throughout for minimal ion loss
- Two-stage ion reflector compensates for energy dispersion to maximize resolution

Performance delivered

Scientists have come to expect industry-leading performance from AB SCIEX mass spectrometers. The TripleTOF™ 5600 System delivers it, with high-resolution, high-sensitivity data, excellent mass accuracy stability, and fast acquisition rates. If you're looking for uncompromised performance, look no further than the TripleTOF™ 5600 System.

Improve productivity and specificity by acquiring information instead of data.

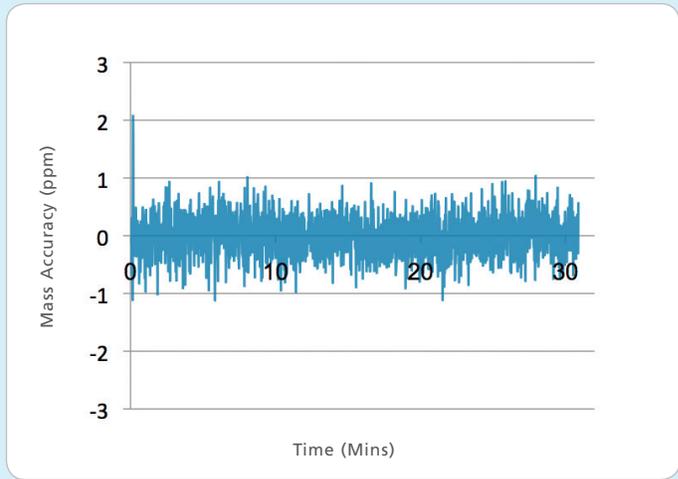
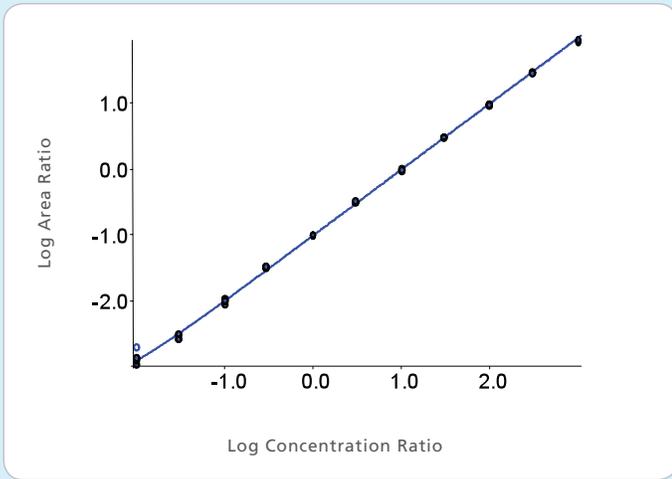
- AutoTune provides easy, automated optimization of quadrupole and TOF calibration and resolution as well as optimized detector settings so that you collect the highest quality information in every run.
- Dynamic background subtraction (DBS) minimizes collection of MS/MS on background ions to increase identification of low-level analytes in the presence of background noise.
- Multiple mass defect triggered IDA (Information Dependant Acquisition) improves efficiency and reduces the need for multiple injections to get comprehensive information. Mass defect can be applied for specific mass ranges, and multiple mass defects can be applied.
- Neutral Loss triggered IDA provides unique specificity by triggering MS/MS when two TOF MS scans (high and low energy) detect a specified mass difference. The result is higher efficiency IDA experiments requiring fewer runs.
- MS/MS^{ALL} is a powerful workflow enabled by the speed and sensitivity of the Triple TOF™ 5600 System, where high quality MS/MS spectra are generated for all masses. A resolving Q1 is stepped across a mass range and high resolution, accurate mass MS/MS is obtained at every mass step. Combined with high resolution TOF MS data, this workflow enables the acquisition of MS and MS/MS on all analytes.
- iTRAQ® Reagent Optimization automatically adjusts the collision energy settings specific for iTRAQ reagent labeled samples, to ensure good ion signal is achieved for the reporter ions for high quality quantitative results.
- Auto batch calibration maintains mass accuracy during long runs by automatically calibrating the system.
- Methods Wizard enables easy creation of acquisition methods with templates for common workflows.

PeakView™ Software is optimized for acquiring and processing accurate mass data for multiple samples. It saves you time during data review by enabling you to apply processing parameters across large sample sets. You can also view spectra from multiple samples simultaneously in a single window for quick and easy qualitative review and comparison.

“A significant leap forward...for biomedical analysis.”

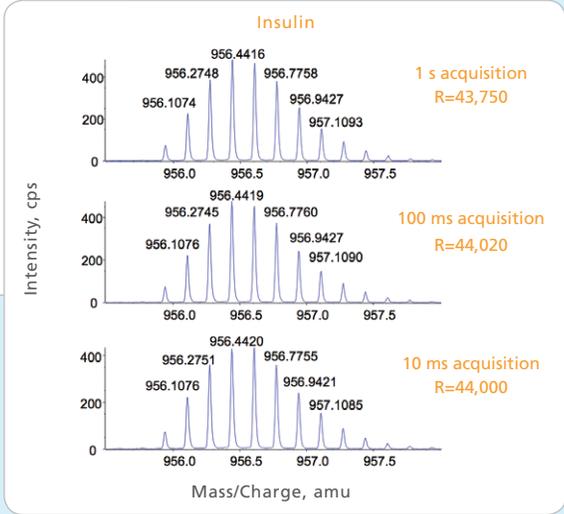
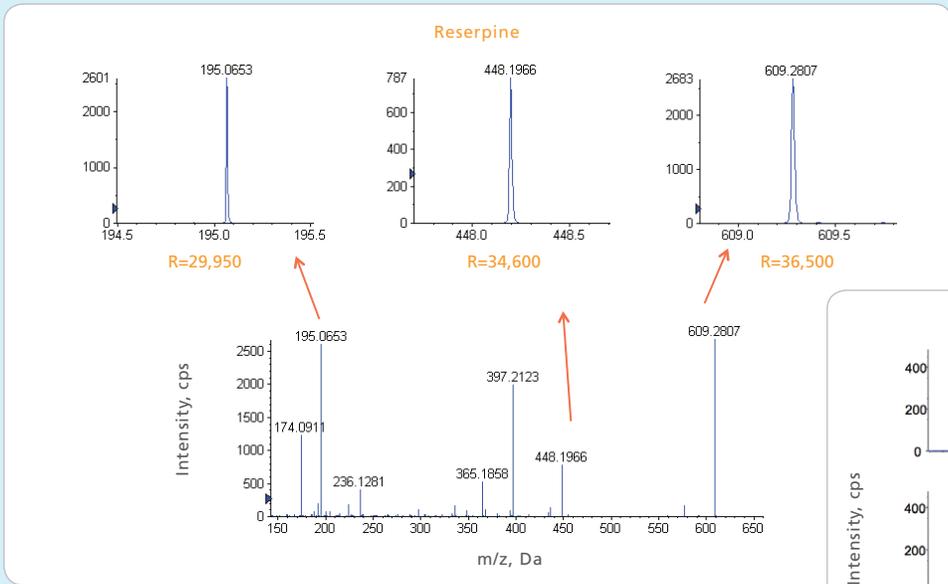
TONY PAWSON, SAMUEL LUNENFELD RESEARCH INSTITUTE
AT MOUNT SINAI HOSPITAL

Formula Finder Software is an enhanced elemental formula calculator for small molecule analysis. It quickly calculates all possible elemental formula for detected masses using both accurate mass and isotope distribution. The software will use MS/MS data when available to confirm the identity of the most likely candidates, while applying 'Chemical logic' to filter out unlikely candidates. Interactive recalibration tools based on found common background ions or experimentally determined fragment masses ensure highest accuracy mass reporting.



High-resolution, high-sensitivity data with acquisition speed up to 100 spectra/sec makes the TripleTOF 5600 System a perfect complement to ultra-fast chromatography. The system also provides 4-5 orders of magnitude of linearity to ensure accurate quantitation in MS and MS/MS modes.

EasyMass™ Accuracy delivers high mass accuracy without continuous recalibration. With external calibration, the mass accuracy holds rock-steady at <1ppm over 30 minutes, and RMS=1.69 over 100 hours.



Reserpine and fragments demonstrate high resolution at low mass, ~30,000 at 100 MS/MS per second. Resolution of insulin (6+) is maintained at >43,000 with data accumulation times of 1 second, 100 milliseconds, and 10 milliseconds.

Applied power

Simple, clear metabolite ID, characterization, and quantitation

From soft spot analysis to definitive metabolite ID and characterization, to quantitation, the AB SCIEX TripleTOF™ 5600 System enables simple, clear, accurate mass metabolism workflows.

- **Identify and characterize metabolites at new levels of speed, efficiency and data quality:** The TripleTOF™ 5600 System is the ideal platform for rapid assessment of metabolic stability and *in vivo* characterization. With the ability to perform both TOF MS and MS/MS scanning at rates suitable for fast LC, you can apply completely generic methodology to acquire high-quality quantitative and qualitative data simultaneously.
- **Quantify drug metabolites** with performance equivalent to MRM on a triple quad. The TripleTOF™ 5600 System is the first accurate-mass, high-resolution MS system with the speed and sensitivity to deliver triple quad-like quantitation.

Streamlined workflows for clinical research and forensics testing

Conclusively identify and quantify low-abundance compounds in complex samples in a single run.

- The TripleTOF™ 5600 System is ideal for General Unknown Screening (GUS) with high confidence identification and quantitation. High resolution and accurate mass in MS and MS/MS modes provide superior specificity for targeted compounds, and the data can be re-interrogated post-run to identify unknown or unexpected components.

Multi-component food and water contaminant screening

Combine multi-target screening quantitation with non-target screening and identification in a single run.

- High sensitivity and high resolution delivered at unmatched speed allow MRM-like quantitation, and accurate mass MS/MS provides the ability to detect and identify unknowns in a single run.

In-depth identification and expression analysis for Omics and biomarker studies

Combine the speed of the TripleTOF™ 5600 System with high resolution and sensitivity for comprehensive identification and quantitation workflows.

- **A new standard for protein identification and targeted quantitation:** The TripleTOF™ 5600 System is capable of achieving the highest acquisition speeds while maintaining maximum resolution and mass accuracy for unmatched protein identification. The resolution and speed also enable MRM-like quantitation without significant methods development.
- **Comparative analysis for metabolomics studies** can be performed on the TripleTOF™ 5600 System with greater precision and confidence than ever before. Profiling of endogenous metabolites can be achieved with unmatched speed and sensitivity to determine statistical differences between samples for the rapid determination of putative biomarkers.
- **Novel workflows for Lipidomic analysis:** Lipid profiling on the TripleTOF™ 5600 System can be used to analyze every lipid species simultaneously. With the new MS/MS^{ALL} workflow it is possible to acquire precursor ion data at every unit mass to obtain high quality MS/MS data on every lipid class within a sample.



AB SCIEX TripleTOF™ 5600

You invest in our technology. We invest in your success.

As the world leader in mass spectrometry, AB SCIEX solutions are backed by the industry's most extensive service and support organization. With a network of service professionals, experienced compliance specialists, and over 150 PhD application scientists worldwide, we are dedicated to supporting your technical needs and helping you get the most out of your AB SCIEX systems.

AB SCIEX service professionals are recognized as the most highly qualified in the industry. They are certified on our instrument platforms through a rigorous 4-step certification program, with re-certification occurring every two years. This award-winning program helps to ensure that you receive the most efficient, highest-quality, and most up-to-date service available for AB SCIEX products and technology. Choose from flexible service plans and a variety of services for the right level of support for your laboratory's needs and budget.

Our customer support network is available to provide expert assistance in the use and application of AB SCIEX products through a comprehensive range of services, including application support, technical service, and training.

Whether you access our service and support team by phone, email, on-site visits, or through our innovative remote monitoring technology, you can be confident that the AB SCIEX organization will be there for you.

For more information, visit www.absciex.com

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