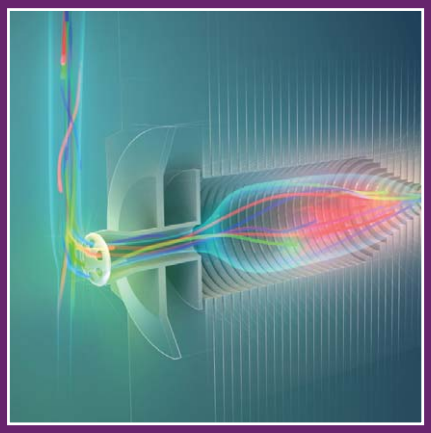


Agilent 6550 iFunnel Q-TOF LC/MS System

Breakthrough iFunnel Technology

for CLEARLY BETTER sensitivity

The Measure of Confidence

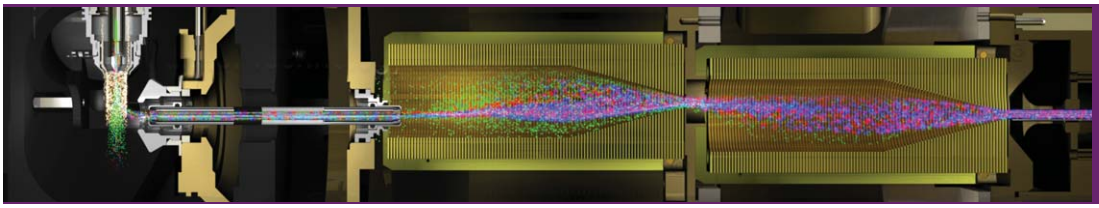
Agilent Technologies

Unmatched speed and sensitivity for your most challenging qualitative and quantitative analyses in a single instrument

Incorporating breakthrough Agilent iFunnel technology, the Agilent 6550 iFunnel Q-TOF LC/MS system delivers the lowest detection levels of any high resolution LC/MS instrument. For the first time ever, you can achieve low femtogram-level sensitivity with high resolution and accurate-mass—making the 6550 iFunnel Q-TOF the ideal choice for pharmaceutical, metabolite ID, discovery proteomics, metabolomics, food safety, forensics, toxicology, and environmental screening applications.

Agilent Ion Beam Compression and Shaping (IBCS) technology provides the greatest sensitivity while maintaining 40k mass resolution and sub 1-ppm mass accuracy. Enhanced electronics and software algorithms enable exceedingly high data acquisition rates of up to 50 spectra/second for ultra-fast UHPLC separations with the Agilent 1290 Infinity LC and for maximum sampling during data-dependent MS/MS experiments.

The Agilent 6550 iFunnel Q-TOF LC/MS delivers the lowest limits of detection over the widest in-spectral dynamic range—in a benchtop system.



iFUNNEL TECHNOLOGY REVOLUTIONIZES ATMOSPHERIC SAMPLING

"Ion Funnel technology could possibly be the most significant MS development since the introduction of the API. It delivers a fundamental sensitivity and detection limit breakthrough—resulting in performance far exceeding the capabilities of conventional mass spectrometers."

Dr. Richard Smith
Inventor of the Ion Funnel,
Battelle Fellow and
Chief Scientist, PNNL

Agilent's proprietary iFunnel technology combines the high-efficiency ESI ion generation and focusing of Agilent Jet Stream sample introduction with unique hexabore sampling capillary and dual stage ion funnel assemblies. This innovative technology demonstrates double-digit increases in sensitivity compared to older instruments.

Agilent iFunnel technology provides a level of robustness unmatched in the industry by combining true orthogonal electrospray orientation with a heated, off-axis funnel geometry to prevent transmission of uncharged species.

Three technological innovations work together to reduce contamination, and dramatically improve overall signal within the system:

- **Agilent Jet Stream thermal gradient focusing**—A precisely micro-machined sprayer surrounds ESI droplets with a sheath of superheated gas to desolvate and concentrate ions near the MS inlet for more effective sampling.
- **Hexabore sampling capillary**—Six independent, parallel bores enable a much larger fraction of the ions formed in the ESI spray plume to enter the mass spectrometer.
- **Dual-stage ion funnel**—Novel design facilitates increased ion transfer to Q1 while evacuating the higher gas load.

Pharmaceutical Research

Ultra-sensitive performance in the most critical Qual/Quan applications

Imagine combining the quantitative requirements of metabolic stability testing and metabolite profiling with the qualitative requirements of metabolite identification – all in a single instrument. This has been realized with the new 6550 iFunnel Q-TOF. The dramatically enhanced sensitivity of this new system facilitates accurate quantification of parent drug and metabolites at levels well below those previously attainable with a high resolution, accurate mass LC/MS system. The system is ideally suited for metabolic stability and profiling studies, combining the highest sensitivity to detect compounds at low pg/mL levels, with 40k resolving power and excellent mass and isotope accuracy for confident identification of metabolites.

Figure A

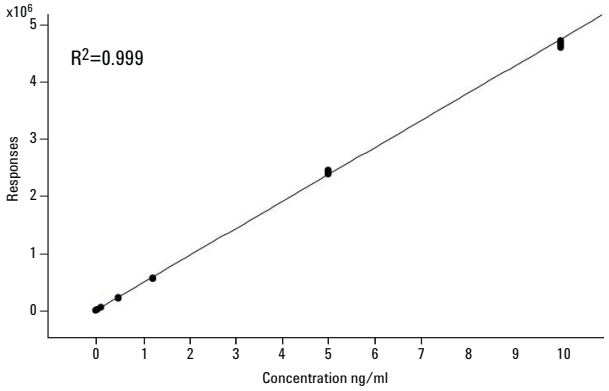


Figure B

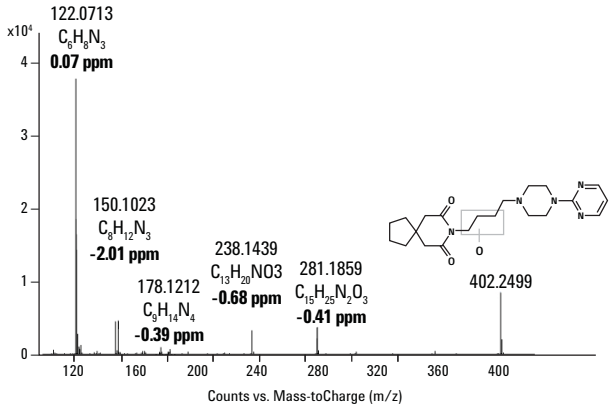
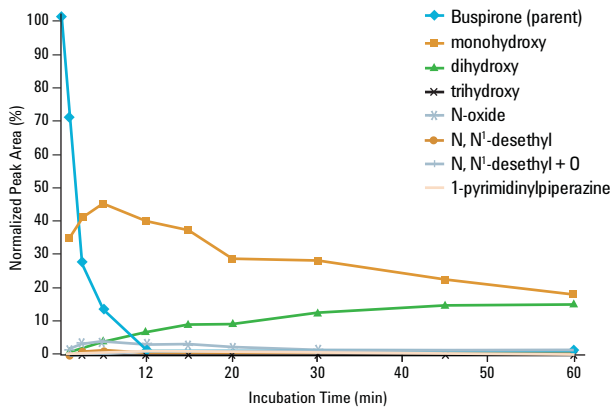


Figure C



The new 6550 iFunnel Q-TOF with high sensitivity and mass-accuracy enables (Figure A) accurate, linear quantitation of buspirone in complex matrix down to low pg/mL concentrations, (Figure B) high quality, accurate-mass MS/MS spectrum of a metabolite, buspirone monohydroxy metabolite, with sub-ppm mass accuracy on both precursor and fragment ions for confident metabolite identification, and (Figure C) metabolic stability and metabolite profiling in rat liver microsomal incubation illustrating complete coverage of major and low level metabolites

Food Safety

Screen and identify pesticide residues with unsurpassed speed and sensitivity

To assure food safety, robust methods are needed to rapidly screen samples for a large number of pesticides and other undesirable contaminants at ultra-trace levels. Unparalleled accuracy in mass measurements and isotope abundance make Q-TOF LC/MS systems the ideal choice for detection and identification of both targeted and non-targeted pesticides. The unsurpassed sensitivity of the 6550 iFunnel Q-TOF LC/MS system facilitates detection and quantitation of trace level compounds, allowing labs to keep pace with evolving regulations and to confidently identify new, emerging contaminants.

While the international action level for pesticide residues in fruit and vegetables is 10 ppb, a recent study by the European Reference Laboratory (Almeira, Spain) showed that 15% of the pesticide compounds tested with a previous generation Q-TOF could only achieve detection limits of 20 to 100 ppb. Using the dramatic sensitivity gains of the new Agilent 6550 iFunnel Q-TOF, a significant improvement in detection limit was demonstrated for the majority of these compounds to less than 10 ppb — including many of the least responsive pesticides.

Figure A

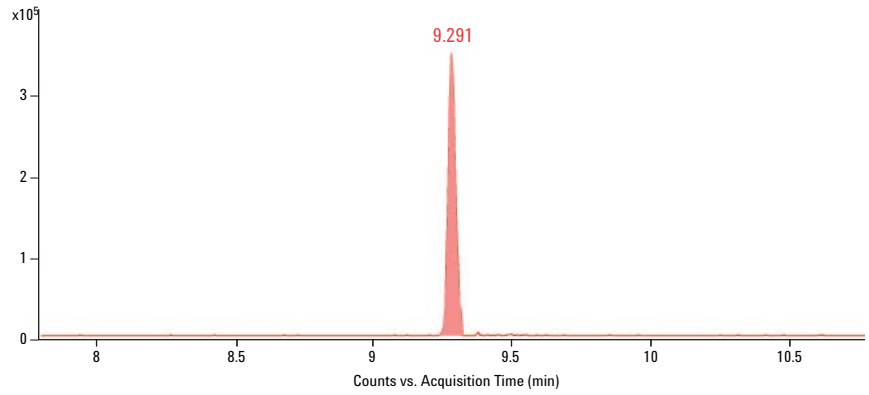
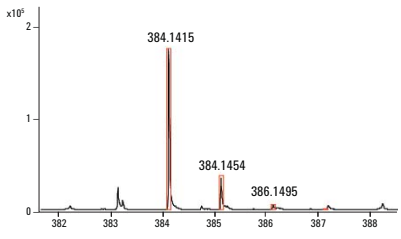
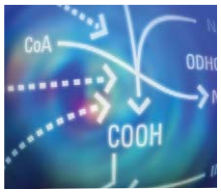


Figure B



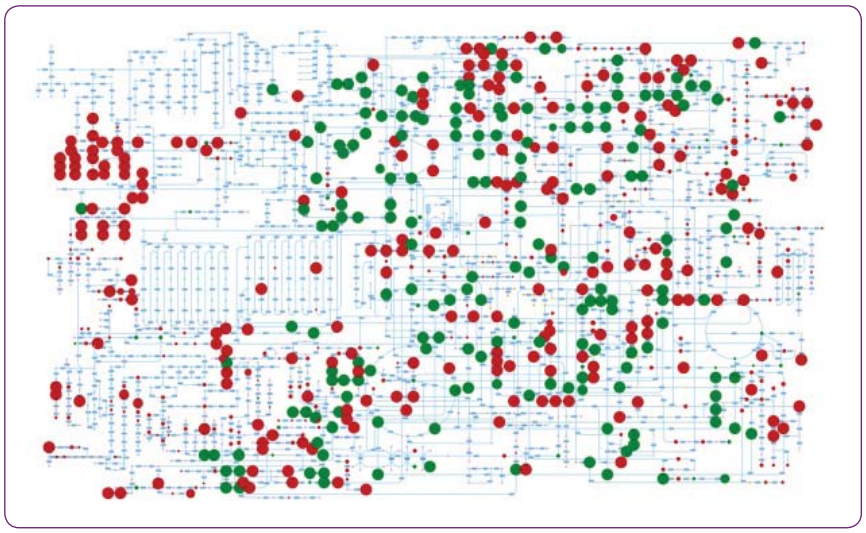
For pesticide analysis, the 6550 iFunnel Q-TOF demonstrated (Figure A) 10-fold sensitivity gain for a poor responding pesticide (fluazifop-butyl) in pepper matrix. Extracted ion chromatogram shows excellent detection (S/N 1200) on 10 ppb fluazifop-butyl and (Figure B) confident compound identification of fluazifop-butyl with an excellent library match score of 98 based on a mass error of only 0.5 ppm and correct fit of isotope abundance and spacing.



Metabolomics

High sensitivity and wide dynamic range for comprehensive metabolite detection

The new 6550 iFunnel Q-TOF allows researchers to delve much more deeply into complex metabolomic samples than ever before. Five orders of in-spectrum dynamic range assure that low level compounds will be seen, even in the presence of more abundant metabolites. Unsurpassed sensitivity increases the detection of trace level metabolites, greatly expanding knowledge of system metabolism and biology.



10-fold Sensitivity Gain Results in Greater Metabolome Coverage
Approaching total coverage of central carbon metabolism. The metabolism map above displays the detected metabolites comparing the 6550 iFunnel Q-TOF with a previous generation Q-TOF system.

- metabolites detected by a previous generation Agilent Q-TOF system and the 6550 iFunnel Q-TOF
- additional metabolites detected using the 6550 iFunnel Q-TOF

"Thanks to the dramatic increase in sensitivity of the 6550 iFunnel Q-TOF, we are finally approaching total coverage of the polar cellular metabolome with little effort and in routine work! The 6550 offers a massive increase in sensitivity with no compromises on accuracy or noise. To my surprise, this directly translated in a massive increase in coverage of cellular extracts as most of the previously undetectable metabolites eventually appeared."

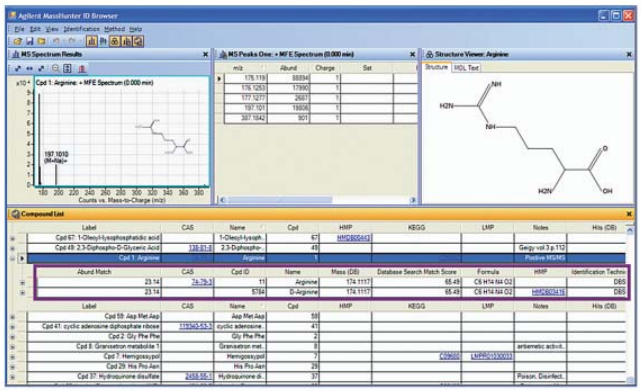
Professor Nicola Zamboni
ETH Zurich,
Zurich, Switzerland

MassHunter Workstation Software

The fastest, easiest way to transform MS data into answers

Agilent MassHunter Workstation software, now operating on Windows 7 OS in native 64-bit mode, is designed to make your MS analyses faster, easier, and more productive. In addition to data acquisition, and instrument control for your Agilent LC/MS, GC/MS, and ICP-MS instruments, the software incorporates advanced data mining and processing tools that let you rapidly and accurately extract all available information from the compounds in your samples—not just peaks and data points, but answers.

The sensitivity and accurate-mass of the 6550 iFunnel Q-TOF LC/MS system is complemented by a comprehensive suite of software applications, supporting solutions for pharmaceutical research, food safety, forensics, toxicology, environmental analysis, metabolomics and proteomics.



Results for mass 174.1117 matched against the METLIN database reveals it to be arginine; molecular formula, database match score, name, KEGG and CASS ID are also shown.

MassHunter Personal Compound Database and Library (PCD and PCDL)

Compound identification is a key element for metabolomics, forensics, toxicology, food safety and environmental analyses. Agilent offers the market's first PCD and PCDL with the ability to use accurate mass MS/MS library for more confident identification of compounds of interest as well as the flexibility to create customizable PCDs and PCDLs.

Agilent provides PCDs for pesticide analysis as well as PCDs/ PCDLs for forensics and toxicology (Broecker, Herre & Pragst) and metabolomics (METLIN)

BioConfirm Software

BioConfirm software provides the industry's most complete solution for addressing the characterization of biopharmaceutical products, such as monoclonal antibodies, with accurate mass LC/MS and LC/MS/MS data. Automated extraction of peptide MS and MS/MS spectra enables peptide mapping by directly assigning peptide MS/ MS spectra product ions to rapidly confirm protein sequence.

Experience clearly better speed and sensitivity for your qualitative and quantitative analyses

If you need to analyze low femtogram-levels of detection for pharmaceutical, metabolite ID , discovery proteomics, metabolomics, food safety screening forensics, toxicology, and environmental applications—take advantage of the unsurpassed sensitivity and robust performance of the Agilent 6550 iFunnel Q-TOF LC/MS system.

Software and services that support the regulated lab

MassHunter software provides comprehensive tools to help you address all the requirements of GLP/GMP and 21 CFR Part 11 compliance. With built-in audit trails, multi-user login security, user permissions, and electronic signatures, the software makes it easier for your laboratory to operate in a regulated environment. Agilent also offers a complete suite of Installation and Operation Qualification services to shorten the time between installation and running critical samples.

The Agilent Value Promise: 10 years of guaranteed performance

In addition to our continually evolving products, Agilent offers the industry's only 10-year value guarantee. Agilent guarantees you at least 10 years of instrument use from your date of purchase, or we will credit you with the residual value of that system toward an upgraded model.

It's our way of assuring you of a safe purchase now and protecting your investment.

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