

HUMAN HEALTH

ENVIRONMENTAL HEALTH



EXACT
QUANTITATION
CONFIDENT
RESULTS



AxION 2 TOF MS

Time-of-Flight Mass Spectrometer


PerkinElmer[®]
For the Better

GREATER CONTROL GREATER INSIGHT GREATER CONFIDENCE



Imagine being able to quantify with the power of exact mass. What would it mean to the depth of your sample insight? What would it do for the certainty of your results? How would it impact your productivity and bottom line?

Now you can find out for yourself with the AxION® 2 TOF MS from PerkinElmer.

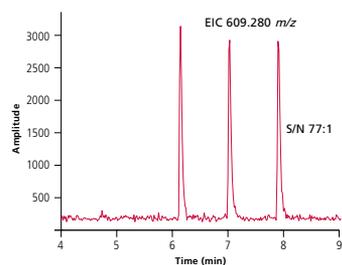
Every workflow is different. Every laboratory has unique demands on its instrumentation. Only the AxION 2 TOF MS delivers the ideal combination of mass accuracy, dynamic range, speed and sensitivity to optimize performance no matter what your application or sample matrix.

Discover the flexibility and functionality of the AxION 2 TOF MS and see how it feels to quantify with complete confidence across the entire mass range.

Everything You're Looking for in a Time-of-Flight Mass Spectrometer

Sensitivity

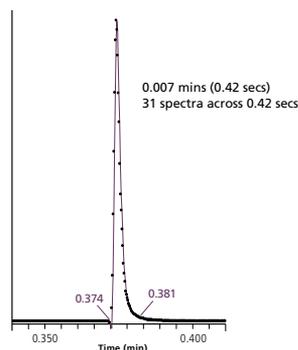
Unique ionization sources and TrapPulse™ technology ensure optimum sensitivity.



3 replicate injections of 1 pg reserpine.

Speed

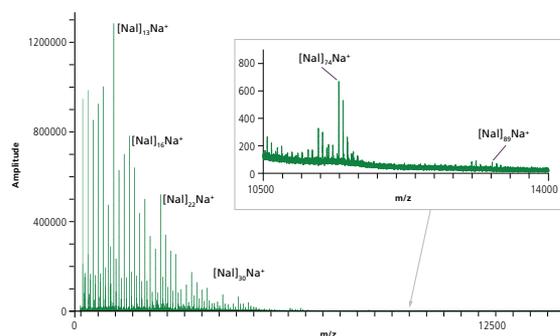
Exceptionally fast acquisition rates enable integration with the fastest LC separations for superior throughput.



Fast LC analysis of reserpine.

Full Spectrum

Measuring and recording every exact mass in each analysis allows you to reprocess data without re-running a sample.



Direct infusion of sodium iodide.

Mass Accuracy

Exact mass capabilities and reliable isotopic ratio measurements deliver complete specificity for unambiguous sample insight.

Isotope	Calculated m/z	Observed m/z	Calculated %	Observed %	ppm Error
1	609.28066	609.2816	100.00	100.00	1.54
2	610.28393	610.2843	37.23	38.67	0.61
3	611.28671	611.2878	8.59	8.51	1.78
4	612.28941	612.2895	1.48	1.38	0.15

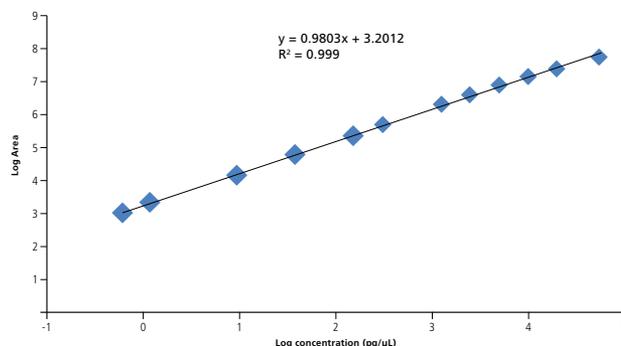
Reserpine injection of 40 pg on column.

Software

Robust yet intuitive solutions designed specifically to streamline and simplify individual workflows.

Dynamic Range

Five orders of linear dynamic range, both intra- and inter-spectrum, provide absolute confidence in your results.



Plot of 3 replicate injections of reserpine.



Different Workflows. Different Requirements. Same Instrument.

The AxION 2 TOF MS offers a broad array of capabilities designed to simplify and streamline virtually any analytical workflow. Whether your application places an emphasis on the instrument's mass accuracy, full spectrum capability, speed, sensitivity, dynamic range, or all of the above, the AxION 2 TOF MS delivers exactly what you need to achieve confident, accurate results.

RELATIVE ANALYTICAL IMPORTANCE

0% 100%

Sensitivity

Speed

Full Spectrum

Mass Accuracy

Dynamic Range

Software: AxION Data System

Sensitivity

Speed

Full Spectrum

Mass Accuracy

Dynamic Range

Software: AxION Solo

Sensitivity

Speed

Full Spectrum

Mass Accuracy

Dynamic Range

Software: AxION EC ID

Bringing Speed and Confidence to Quantitation

- Five orders of linear dynamic range and exact mass capabilities let you truly quantify compounds across a wide mass range.
- Intra-spectrum dynamic range allows the use of isotopic ratios for confident compound confirmation.
- The powerful, intuitive AxION data system gives you instant access to all tools and information, from quantitation and calibration curves to real-time viewing of lock-mass calibrated extracted ion chromatograms (EICs).

Bringing Simplicity and Certainty to Target Analysis

- Full spectrum measurement in every analysis offers complete information for the screening of single targets or multiple compounds.
- Unrivaled mass accuracy and precise isotope ratios make it easy to find your target.
- Five orders of intra-spectrum dynamic range enable isotopic ratio pattern matching so you know you're screening the right compound.
- AxION Solo™ streamlines the most complex target analysis with a flexible, user-configurable and easy to interpret graphical interface for analyzing all of your targets and samples at the same time.

Bringing Efficiency and Accuracy to Compound Identification

- Wide dynamic range and exact mass capabilities make it easy to accurately identify unknown compounds.
- Full spectrum measurement captures the complete composition of every sample and allows you to check for any compound at any time.
- Isotopic ratio matching, capillary exit Collisionally Induced Dissociation and real-time lock mass calibration offer detailed structural insight allowing data mining without re-running your sample.
- User-friendly AxION EC ID software provides a ranked summary of formula matches, allowing the user to find the correct formula for their compound quickly and efficiently.

STATE-OF-THE-ART TECHNOLOGY UNRIVALED SENSITIVITY

Engineered with an array of patented and proprietary technologies, the AxION 2 TOF MS offers exceptional sensitivity without compromising resolution or mass accuracy. Capable of spectacularly fast acquisition rates, the instrument integrates perfectly with the fastest LC separations to deliver better signal-to-noise ratios and higher throughput for a wide variety of compounds.

Orthogonal Design

Maximizes resolution and sensitivity while minimizing background chemical noise.

Capillary Exit Collisionally Induced Dissociation (CID)

Allows you to modulate the ion fragmentation under vacuum in a controlled and clean environment for more detailed structural elucidation.

Patented Ion Sources

Ensure ultimate sensitivity by delivering the most efficient nebulization and desolvation for the most effective ionization available.

Patented Multi-Stage Ion Guide

Maximizes ion transmission across multiple vacuum stages for superior sensitivity.

V-Shaped Flight Path

Delivers the resolution needed to solve the toughest analytical challenges while maintaining the highest levels of sensitivity.

Electron Multiplier Detector

Provides exceptional spectral integrity and superior peak resolution through a fast acquisition rate and wide dynamic range.



AxION Separation Probe

The innovative AxION Separation Probe facilitates chromatography directly at the ionization source. This minimizes dead volume effects in the system for superior signal-to-noise ratios, enhanced sensitivity and narrower peaks.



Proprietary Innovations for Superior Performance

PerkinElmer has designed the AxION 2 TOF MS with a series of unique, cutting-edge technological innovations to optimize its performance and ensure it delivers an unsurpassed level of sensitivity and productivity.

Industry-Leading Ionization Sources

Allow you to select the ideal solution for a particular application or class of compound so you can optimize the instrument's performance under any analytical conditions. Both source types feature unique interchangeable snap-in probes that can be dedicated to specific applications, minimizing cross-contamination and enhancing productivity.

Dual-probe Ultraspray™ 2 Electrospray Ionization (ESI)

- Dedicate one inlet to your sample and the other to an internal standard for real-time lock mass calibration enabling:
 - Enhanced mass accuracy.
 - Simpler method development.
 - Faster analysis times.
- Unique, grounded probe delivers the softest ionization available to preserve the molecular structure of the most labile compounds.



Field-Free Atmospheric Pressure Chemical Ionization (APCI)

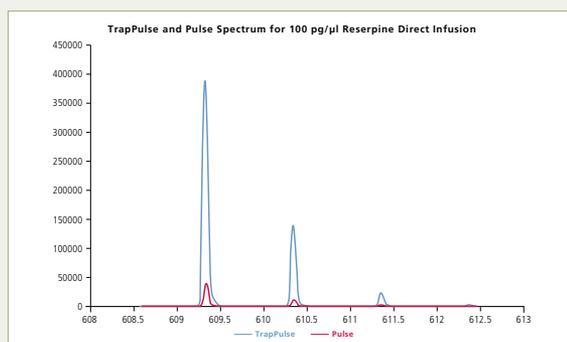
- Optimum performance at both high and low flow rates down to 50 $\mu\text{L}/\text{min}$ without compromising sensitivity.
- Field-free design produces less noise and more reliable results than conventional sources.
- Simplest set up and operation with no needle or probe position optimization required.

Patented Capillary Shutter

Allows the capillary and entire source housing to be removed for maintenance without shutting down the vacuum. This capability eliminates the need to vent the system—and the time required to bring it back up to vacuum—ensuring greater instrument uptime and superior productivity. Unique to PerkinElmer, the shutter also prevents air from entering the instrument when the capillary is removed, eliminating any possibility of contamination.

Proprietary TrapPulse Technology

Increases sensitivity on average 10x by collecting dense packets of ions before accelerating them into the flight tube. The duty cycle of the pulser is synchronized with the arrival of the ion packets to ensure maximum ion transport to the state-of-the-art detector. Innovative and highly efficient, TrapPulse technology provides a higher amplitude signal and a reduction in baseline noise while maintaining exceptional resolution and mass measurement accuracy during Time-of-Flight MS acquisition.



By using the breakthrough TrapPulse technology on the AxION 2 TOF MS, you can typically experience a 10x increase in sensitivity (shown in blue) for clearer, more definitive results.



Nitrogen Generator

Our sophisticated LC/MS Nitrogen generator has Phthalate-free componentry with 24/7 continuous automatic operation. The generator also contains field-proven Pressure Swing Adsorption (PSA) technology, and is CE, UL & CSA approved.

To complement the many hardware innovations of the AxION 2 TOF MS, PerkinElmer offers a variety of software solutions specifically designed to streamline and simplify today's laboratory workflows. Simply select the package best suited to your specific application and you'll discover an intuitive, robust interface offering everything you need to convert complex samples into confident results.



AxION Data System for Quantitation Workflows

The AxION data system simplifies everything from controlling your LC/TOF MS to accessing, managing, processing and reporting data. The software gets you up and running faster with the most advanced, one-click Time-of-Flight AutoTune.

The only data system capable of providing real-time mass-calibrated extracted ion signals (lock mass), it simplifies and optimizes method development to deliver faster, more reliable results for any compound-driven quantitative analysis.



With the AxION data system, all the tools and information you need for confident quantitative analysis are within easy reach.

- Lock mass calibrated extracted ion chromatograms are displayed in real time for instant compound confirmation and optimized method development.
- Data from MS, PDA and analog detectors can be combined and displayed on screen.
- EICs can be graphically extracted from mass spectra in real time.
- All spectra are captured for each analysis for post-processing quantitation of additional masses.
- Built-in compound dictionary allows storage of user-specified compound names.

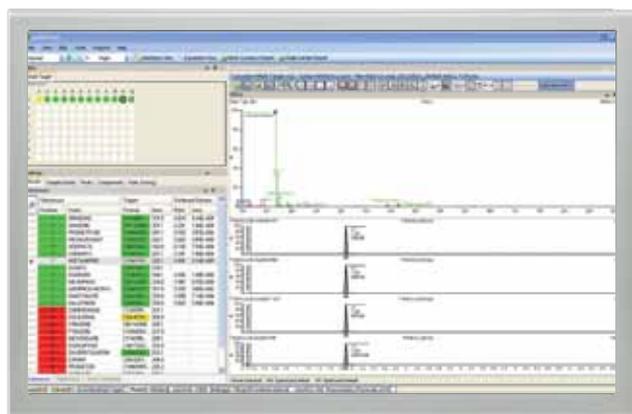


AxION Solo for Target Analysis Workflows

The faster your processing, the quicker your results, and the sooner you can make decisions. That's the productivity-enhancing power of AxION Solo.

By allowing you to arrange and view windows to mimic your workflow—whether it's for single or multiple target investigations—the software makes it easy to maximize analytical throughput and minimize costs.

A highly intuitive, compound-centric software, AxION Solo helps you quickly find what you're looking for—graphically, clearly, accurately.



AxION Solo displays multiple samples in a plate or vial view for quick, easy target identification.

- Extensive reports and results publishing options.
- Broad array of data-evaluation parameters, including:
 - Found and pure/not found.
 - Found contains fragments.
 - Found and confirmed with isotopic ratios and retention time.
- Ability to view multiple samples in a plate or vial view and quickly identify your target in the samples.

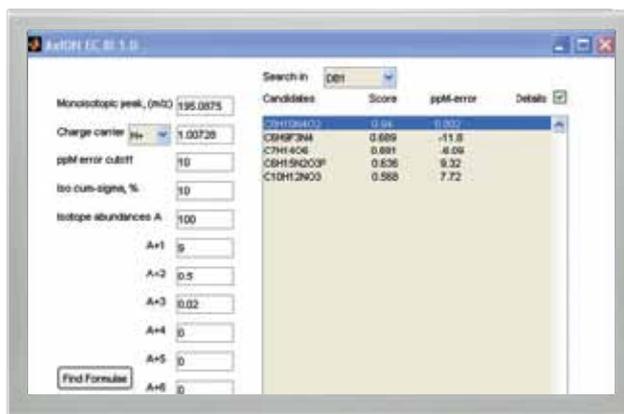
AxION Xpo™

For those requiring the reviewing and reporting functionality of AxION Solo but not its processing capabilities, AxION Xpo offers a compound-centric data-viewing environment in which to assess your results and customize your reporting.

AxION EC ID for Compound Identification Workflows

Fast, accurate compound identification requires the ability to find the right formula quickly and efficiently. And nothing narrows your search more rapidly, simply or clearly than AxION EC ID (Elemental Composition Identification).

Highly flexible and intuitive, this proprietary software takes the exact mass and isotope pattern data from the AxION 2 TOF MS and uses it to search for known formulas in various databases. Matched formulas are shown in a simple summary and scored according to your match parameters so you can quickly pick the correct one.



AxION EC ID converts exact mass data of unknown compounds to known formulas.

- Matched formulas are shown in a ranked summary (based on theoretical accuracy and isotopic ratios) to help you choose the correct one.
- Mass error tolerance and isotope ratio matching criteria are user-defined.
- Simple and intuitive, the interface allows the generation of accurate, reliable results without in-depth elemental or chemistry knowledge.
- Each parameter match between observed and experimental data can be viewed by checking the "Details" box.

THE NUMBER ONE NAME IN SERVICE AND SUPPORT

Nothing has a greater impact on productivity or return on investment than instrument uptime. And no one does more to ensure your chromatography and mass spectrometry systems perform day in and day out than PerkinElmer.

With OneSource® Laboratory Services, you have the world's largest and most respected global service and support network at your disposal. We go beyond just maintenance and repair of instrumentation. We incorporate laboratory asset management as part of our customers' business equation—a partner with proven results in improving efficiencies, optimizing operations and providing cost certainty across the globe. No matter what you need, our team of certified, factory-trained Customer Support Engineers is just a phone call away, 24 hours a day, seven days a week.

Operating in more than 150 countries with more than 400,000 assets currently under care, OneSource offers the most comprehensive portfolio of professional laboratory services in the industry, including complete care programs for virtually every technology and manufacturer. By allowing you to consolidate all your service contracts under a single supplier, and by providing responsive, expert technical advice and support at a moment's notice, we ensure your instrumentation—and your lab—is running at optimum levels at all times.

Whether it's care and repair, validation and compliance, asset management and laboratory relocation, software and hardware upgrades or education and training, OneSource is... the ONE you can count on.



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