

COMPLETE THIS FORM TO INITIATE SUPPLIER SCOUTING

MEPNN Supplier Scouting Opportunity Synopsis

- *The submitting organization (ex. MEP Center, requesting company, federal/state agency) agrees to notify NIST MEP of the status of actions taken as a result of this scouting instance within 30 days after receiving a results report. Notification should be via email to scouting@nist.gov, indicating the following:
- Contact with matches identified in report complete and supply contract awarded, process complete
 - Contact with matches identified in report complete and no supply contract awarded, process complete
 - Contact with matches identified in report complete and supply negotiations underway, process in progress
 - Contact with matches identified in report underway; supply negotiations not yet begun; process in progress
 - Contact with matches identified in report not yet begun, process in progress
 - Contact with matches identified in report will not occur within the next 6-months, process complete

Sciex Triple Quad 7500

15 days

Opportunities will be posted for 30 days unless specified

Item to be Scouted

Please describe the item application/ the end use of item.* Provide the item number if applicable: (N95 Mask vs Protective Mask).

The Sciex Triple Quad 7500 LC-MS/MS System – QTRAP Activated is a triple quadrupole tandem mass spectrometer interfaced to a liquid chromatography platform. The system will enable high throughput identification and quantitation of chemicals over a wide range of concentrations starting at part per quadrillion (ppq or pg/L) levels in complex matrices. The instrument has multiple ionization modes and enhanced ability to select analytes of interest in challenging matrices such as serum, plasma, tissues, cells, cell media, and sediments that are used in CCTE research. These features enable highly sensitive detection of a wide assortment of compounds of interest with minimal pre-processing. CCTE will use the instrument to expand capacity and capability for on-going and new StRAP 4 research projects to inform adverse outcome pathways of thyroid disruption and developmental neurotoxicity (DNT), new approach methods (NAMs) to assess neurotoxicity and points-of-departure for PFAS, in vitro assays to characterize thyroid function, and presence and persistence of PFAS and pesticides in environmental and biological matrices. The requested equipment will provide a platform for quantitative and qualitative determination of endogenous biochemicals including thyroid hormones, lipids, bile acids, and hormones; simultaneous screening for hundreds of analytes of environmental and toxicological interest; and quantitation of environmental contaminants including PFAS and pesticides that are well below the detection limits possible with other in-house and commercial mass spectrometers.

2022-076

Supplier Scouting Number (NIST MEP use)

Scouting customer/product NAICS Code, if known

TECHNICAL INFORMATION:	1. Supplier Information	a. Type of supplier being sought*	<input checked="" type="checkbox"/> Manufacturer	<input type="checkbox"/> Contract Manufacturer	<input type="checkbox"/> Distributor	
			<input type="checkbox"/> Other _____			
		b. Reason for scouting submission*	<input type="checkbox"/> 2nd Supplier <input type="checkbox"/> Price <input type="checkbox"/> Re-shore <input type="checkbox"/> Past supplier no longer available <input type="checkbox"/> New Product Startup <input type="checkbox"/> Other Explore potential establishment of a US (domestic) source per Executive Order 14005.			
	2. Summary of Technical Specifications and Performance	a. Describe the manufacturing processes (elaborate to provide as much detail as possible).*	This is a multi component system with precisely manufactured machined parts and electronics. In addition to manufacturing the mass spectrometer, the instrument manufacturer assembles components such as vacuum pumps, chromatography pumps, gas generators, power supplies, benches, valves, switches, software, degasser, autosampler, mixer, cables, tubing, bottles, etc. to enable the instrument to operate according to specifications.			
b. Provide dimensions / size / tolerances / performance specifications for the item.*		Please see attached product description and mass spectrometer specifications.				
c. List required materials needed to make the product, including materials of product components.*						

■	<p>Product is a complex electronic scientific system consisting of a stainless steel casing, radio frequency generators, voltage generators, lenses, nebulizers, valves, switches, vacuum pumps, liquid pumps, power supplies, various control mechanisms, software, computer workstation, and electronic components (e.g. circuit boards, LED lights). Please see attached product brochure and system component listing.</p>
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	Requirements and Performance	<p>d. Are there applicable certification requirements?* <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Please explain</p>
		<p>The EPA requires that the equipment be UL-listed.</p>
		<p>e. Are there applicable regulations?* <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Please explain</p>
		<p>The equipment is intended for research use only.</p>
		<p>f. Are there any other standards, requirements, etc.?* <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Please explain</p>
		<p>Laboratory Equipment and Devices Applicable Standards: International Commission (IEC) Standards, International Organization for Standardization (ISO) Standards, and ANSI/AAMI Standards.</p>
		<p>g. Additional Comments: Is there other information that would impact the item's performance or usefulness? Please explain.</p> <p>N/A</p>
BUSINESS INFORMATION:	Pricing	<p>3a. Estimated potential business volume (i.e., # Units Per Day, Month, Year) *:</p> <p>One.</p>
		<p>b. Estimated target price / unit cost information (if unavailable explain) *:</p> <p>\$600,000</p>
	Delivery Requirements:	<p>4. a. When is it needed by? (Immediate, 30 Days, 6 months, etc.)*</p> <p>Immediate and for long term future needs.</p>
		<p>b. Describe packaging requirements (i.e., individually/group packaging)*</p> <p>Laboratory Equipment and Devices Applicable Standards: International Electrotechnical Commission (IEC) Standards, International Organization for Standardization (ISO) Standards, and ANSI/AAMI Standards applicable packaging.</p>
		<p>c. Where will this item be shipped? *</p> <p>Research Triangle Park, North Carolina</p>
	Comments:	<p>5. Additional</p> <p>Is there other information you would like to include?</p> <p>"Vendor/company must be registered or will register in SAM.gov (https://sam.gov/content/home)." - "This inquiry does not guarantee award of a contract." - "EPA requires a commercial off the shelf instrument that is immediately available that meets the technical specifications attached. Vendors shall provide documentation that their proposed product meets or exceeds the technical specifications attached."</p>

Photos or diagrams of the item (helpful but not required).

SCIEX 7500 System

GO **BEYOND**

GO BEYOND the current limits of sensitivity, productivity targets, ruggedness and robustness challenges. **GO BEYOND** with the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready.

Enter a new era of sensitivity in LC-MS/MS. The SCIEX 7500 System can enable new levels of quantification across a large suite of sample types and workflows.



Powered by SCIEX OS Software


The Power of Precision

SCIEX 7500 System

GO BEYOND robustness with breakthrough innovation...

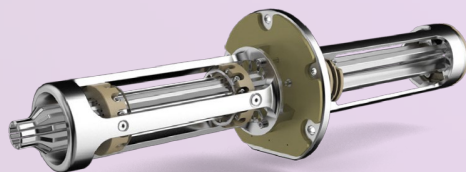
INCOMPARABLE

GO BEYOND sensitivity. Built with D Jet™ Ion Guide and integrated E Lens™ Technology, the SCIEX 7500 System enables you to experience up to 7X increased sensitivity. Start detecting the previously undetectable and quantify at lower levels with impressive precision.



INGENIOUS

GO BEYOND your laboratory's current capabilities. Characterize analytes that were once masked by matrices with the D Jet Ion Guide. The unique design of the ion guide retains and captures more of the ion plume. The evolution of the Turbo V™ Ion Source, the OptiFlow® Pro Ion Source, simplifies sample prep and utilizes E Lens Technology to sample more ions, so you can get more from your ESI workflows.



PRODUCTIVE

GO BEYOND and expand your lab's potential to a new dimension of efficiencies, compound analysis and sample testing. The SCIEX 7500 System is powered by SCIEX OS Software, a platform for this next generation of mass spectrometers. Experience intuitive software features and functions that are complemented by visual aids and components to enable quick, accurate and confident data review on the SCIEX 7500 System.



The QTRAP-enabled functionality opens up the SCIEX Triple Quad to a world of possibilities with MS/MS confirmation, enhanced selectivity with multiple reaction monitoring with multistage fragmentation (MRM³) and enhanced product ion (EPI) scan types.

GO BEYOND with the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready.

GO BEYOND 

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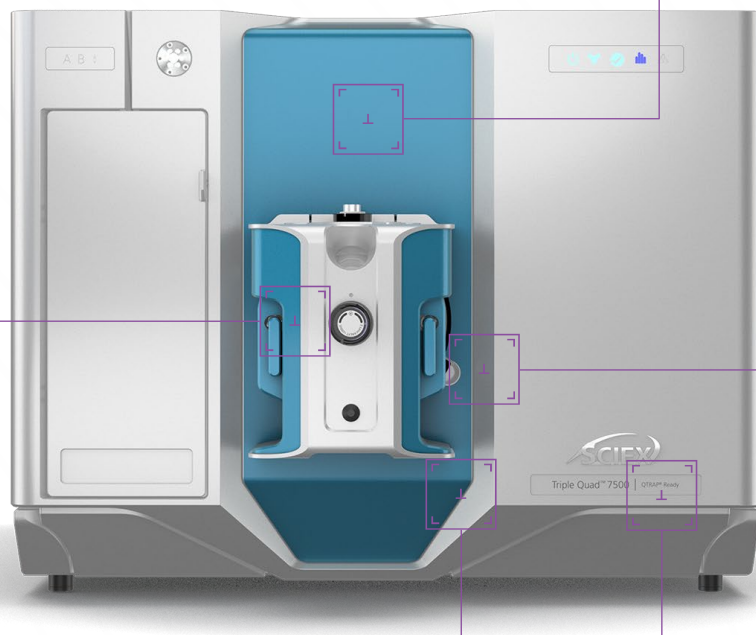
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SCIEX 7500 System

IONIZATION SOURCE

Execute fast interchanges between high flow and low flow to adapt to your workflow needs. The OptiFlow® Pro Ion Source introduces a new modularity feature and incorporates the reliability and efficiency of the legendary Turbo V™ Ion Source.



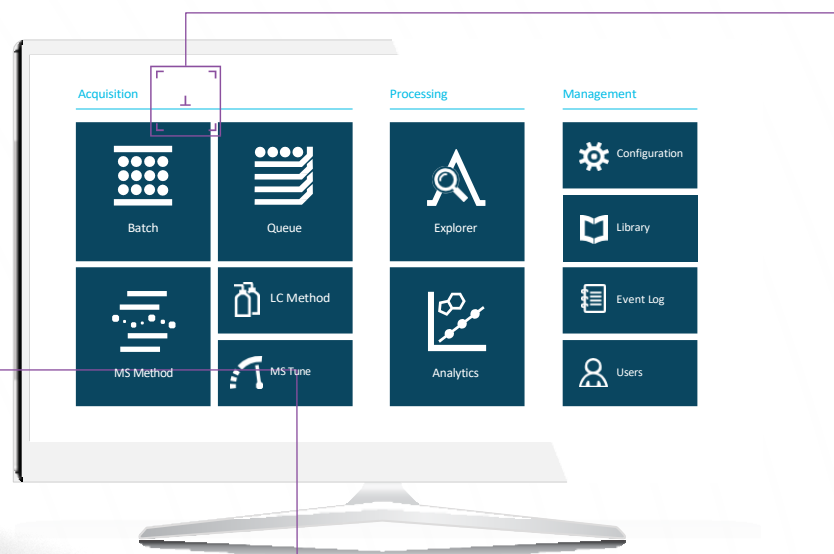
DETECTION

Attain lower levels of quantification compared to other SCIEX instruments. The precise and robust engineering of the ion rail allows consistent and reproducible analysis time after time, by focusing on the crucial ions that you need for your workflow.

[Learn More](#)

SCIEX OS SOFTWARE

Analyze and represent your data in a new and intuitive format. Control, acquire, analyze, interrogate and report, all on one software platform.



E LENS™ TECHNOLOGY

Sample more ions so you can get more from your ESI workflows and protect your precious and limited sample. With the E Lens Technology, the power and efficiency of the Turbo V Ion Source geometry is enhanced in the new OptiFlow Pro Ion Source, which focuses the transmission of ions in the ESI plume into the orifice of the system.

QTRAP® READY

Future proofing your lab with a single platform. All the benefits of QTRAP functionality available with activation of a software license. Triple quadrupole functionality for quantitation plus full scan MS/MS for confirmation and MRM³ for selectivity.

D JET™ ION GUIDE

Capture more of the ESI plume and retain more of the important ions than with previous technologies. The D Jet Ion Guide efficiently captures and transmits the ions in the high gas flow behind the orifice plate and focuses analyte ions from the sample into a tight beam.

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GO **BEYOND**™



SCIEX 7500 System

OPTIFLOW[®] PRO ION SOURCE

Turbo V™ Ion Source

Since the introduction of the API 4000™ LC-MS/MS System, the Turbo V Ion Source has been an integral part of SCIEX instruments. The robust source is a driving force behind efficient analytical workflows and synonymous with efficiency and unrivaled productivity. In pharmaceutical development, food and environmental testing, life science research discoveries, clinical workflows and forensic investigations, laboratories all over the world have been leveraging the robust and ruggedness of SCIEX systems to examine complex and crude matrices.

And now...we **GO BEYOND**



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GO **BEYOND**[®]



SCIEX 7500 System

THE EVOLUTION OF THE TURBO V™ ION SOURCE IS HERE

The OptiFlow® Pro Ion Source is built on the foundation of the legendary Turbo V Ion Source and is incorporated into the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready. The simplistic architecture and orthogonal spray design with the V heater configuration provide an ideal temperature distribution and optimized Curtain Gas™ flow to achieve high sensitivity from the ESI droplets. You have the flexibility to set up any workflow quickly. Whether it's standard ESI and APCI workflow or even the option of setting up microflow workflows, you can achieve optimal spray conditions without manual adjustments. This durability and flexibility on the SCIEX 7500 System, offers you a wide compound class coverage to address your laboratory's opportunities.

Take advantage of quick switching between flow regimes. The source is compatible with a broad flow range from microflow (1 µL/min) to analytical flow (up to 3 mL/min) with interchangeable probes and electrodes, selecting the right flow rate for the job that will generate the highest quality results is now easier. You now have the option to quickly switch to microflow hybrid electrodes and potentially boost your detection limits and save costs on mobile phase expenses.

The OptiFlow Pro Ion Source paves the way for your lab to **GO BEYOND** its capacity, offer new services and discover more about your samples.



GO **BEYOND**™

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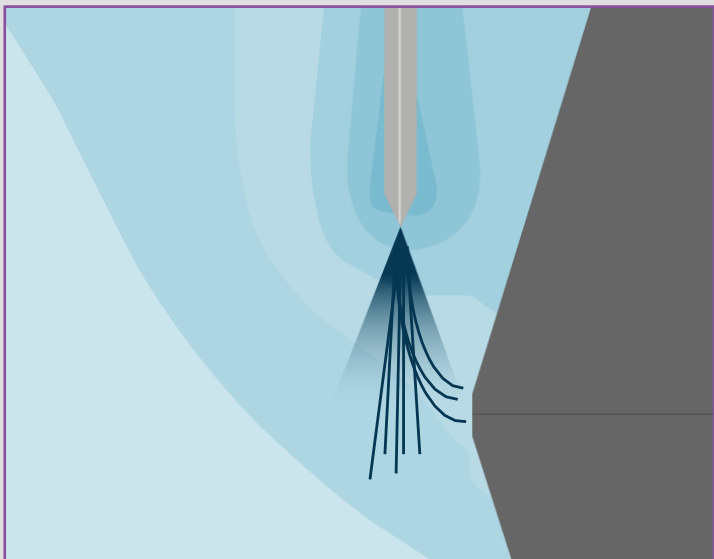
SCIEX 7500 System

E LENS™ TECHNOLOGY

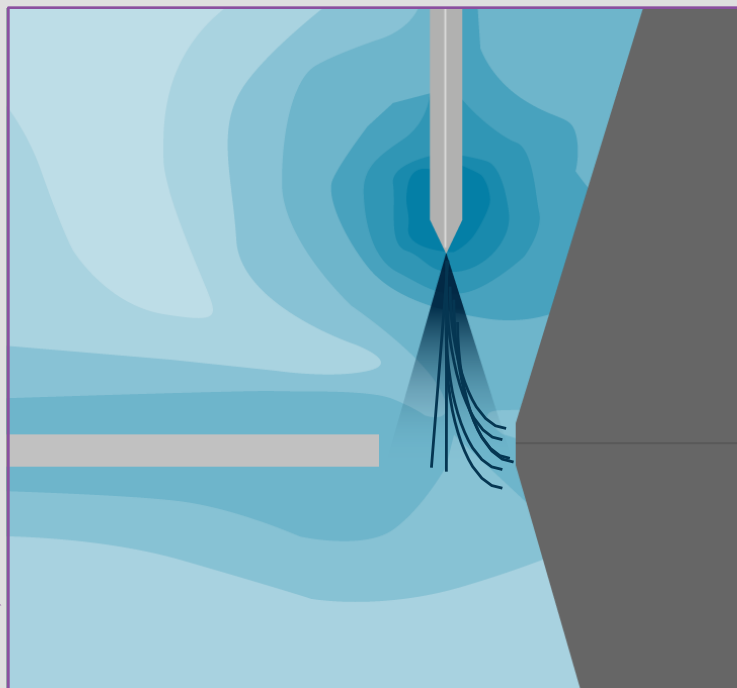
The E Lens Technology is a breakthrough innovation that further enhances the power and efficiency of the SCIEX Turbo V™ Ion Source geometry, which is integral to the OptiFlow Pro Ion Source.

The E Lens Technology creates an increased field strength near the instrument orifice, which improves ion collection efficiency and drives more energetic ESI droplet desolvation. This improves ion generation and sensitivity.

WITHOUT E LENS TECHNOLOGY



E LENS TECHNOLOGY



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GO **BEYOND**™

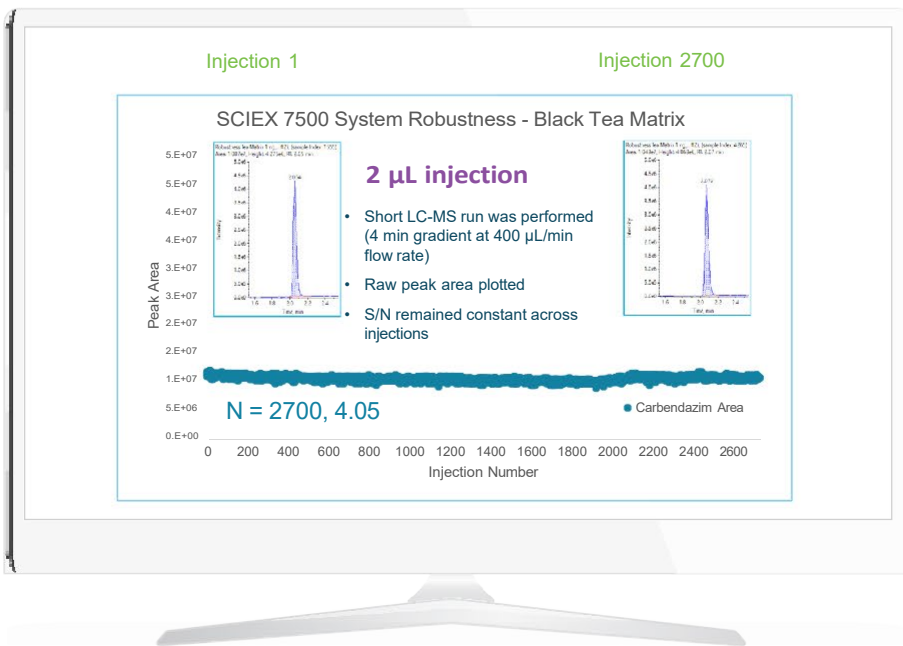
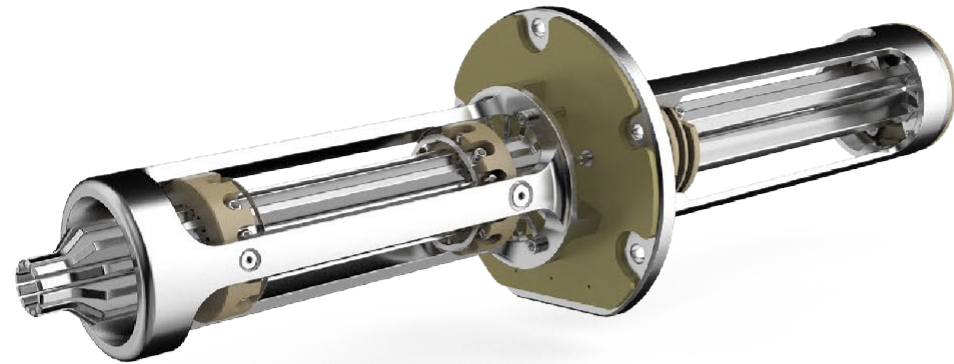


SCIEX 7500 System

D JET™ ION GUIDE

The D Jet Ion Guide incorporates the precise engineering and quality expected with all SCIEX products. Integrated into the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready, the D Jet Ion Guide enables you to sample more ions, regardless of ionization type.

The unique design of the ion guide captures and retains more of the ion spray plume, enabling you to gain a more accurate profile of your sample. The D Jet Ion Guide collects the plume and concentrates the ions using radio frequency (RF) while removing the gas molecules and neutral ions.



The novel engineering of the D Jet Ion Guide bridges the pressure regimes throughout the optics of Q0, Q1, Q2 and Q3, supports consistency and stability for low-level detection. Combined with the OptiFlow® Pro Ion Source and E Lens™ Technology, the D Jet Ion Guide offers you greater sensitivity through sampling more ions.

Built on the SCIEX 7500 System, **GO BEYOND** with the D Jet Ion Guide and start detecting low-level trace analytes across many workflows and matrices.

GO **BEYOND**

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SCIEX 7500 System

SCIEX OS SOFTWARE

Enter the next era of SCIEX mass spectrometers with SCIEX OS Software. SCIEX OS Software will expand your lab's potential to a new realm of efficiencies, compound analysis and sample testing.

SCIEX OS Software has evolved the key components of the Analyst® Software and added intuitive features to enable you to quickly analyze and represent your data in a compliant, intuitive format. Control, acquire, analyze, process, interrogate and report from an all-in-one software platform. Experience a second generation of peak modeling, which improves peak finding and integration. With Real Time Decisions actions on the queue, flag results as real-time analysis is performed. It's time to detect and correct actions on the sample queue immediately, with no sample loss or time. The outlier functionality simplifies calibration curve review.

Combine transparency and control to create the ideal security blanket for your laboratory. The software is complete with features and functions to operate in a 21 CFR Part 11 compliant environment. Access customizable tools that give you the flexibility to configure security settings to comply with your specific requirements. With SCIEX OS Software, you will have a GxP compliant LC-MS/MS software and a reliable validation support team behind you to get your SCIEX 7500 System up and running in your lab.

Get ready to **GO BEYOND** with the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready powered by SCIEX OS Software.

Acquisition

Processing

Batch

Queue

MS Method

LC Method

MS Tune

Analytics

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GO **BEYOND**™

QTRAP[®] READY

GO BEYOND your quantification workflows with additional scan types to get more data and information out of the same injection. The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP[®] Ready expands the traditional MRM workflows with QTRAP Ready technology.

With an easy upgrade path from MRM, access linear ion trap scan features that will help you enhance your conventional triple quadrupole experiments. Not only will your workflows retain the accuracy and precision of an MRM analysis, but they are complemented with richer data.

Run an MRM experiment with a QTRAP scan such as MRM³, or an enhanced product ion (EPI) scan, without a drop in sensitivity of the instrument. The QTRAP functionality on the SCIEX 7500 System enables you to quantify your analytes to low trace levels and provide you additional data so that you can make confident decisions and interpretations of your sample data.

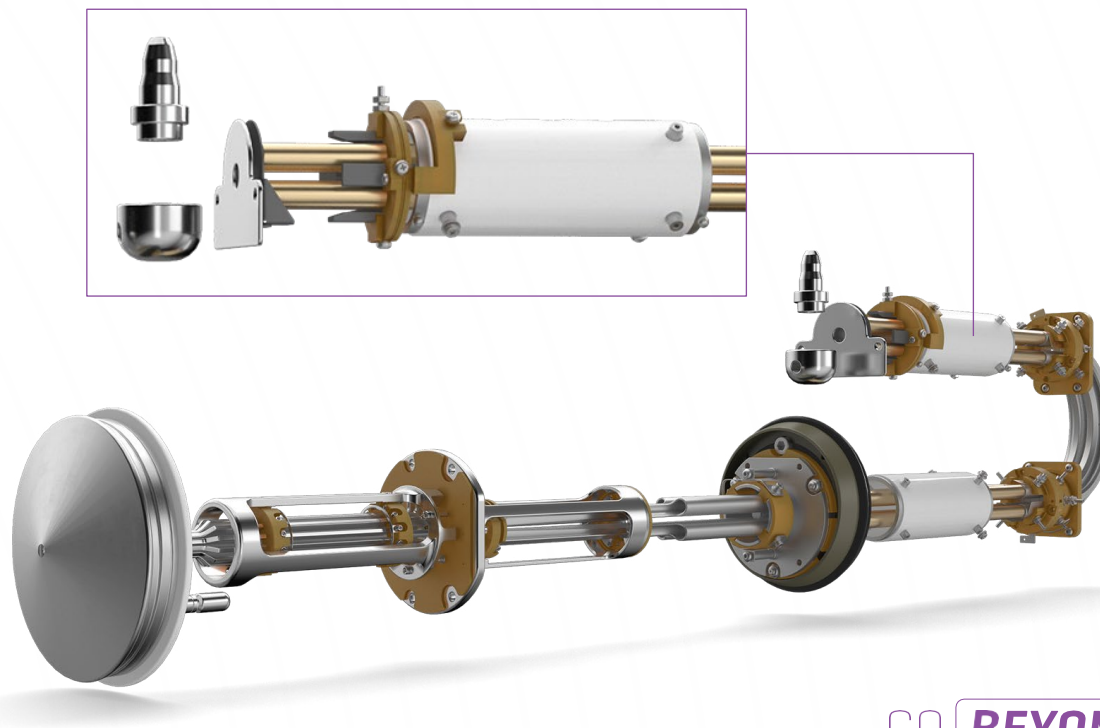
QTRAP SCAN TYPES

Enhanced product ion scan gives you greater confidence in your data. The enhanced product ion scan is a trap scan that can help you obtain a high-quality MS/MS spectrum on a specific ion.

MRM³ offers you better specificity and quantitative performance. This is an effective scan solution that removes high background and interferences and can achieve lower detection limits.

Enhanced MS delivers a highly sensitive full scan for the detection of unknown analytes.

Enhanced resolution can help you find and characterize components in your sample. The enhanced resolution scan mode allows high-resolution MS to be obtained for an ion of interest.





SCIEX 7500 System

PHARMA AND BIOPHARMA

The rapid advancement of the drug pipeline has increased the focus on diverse therapeutic classes such as oligonucleotides and cell therapies. With this comes analytical complexities that expand beyond matrices, including cell, tissue and the usual biological fluids, and novel therapeutics. In addition to that is the challenge of extensive sample preparation and high background interferences while seeking lower limits of quantification.

The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready provides an elegant solution to tackle many of these challenges. Take your sensitivity to the next level. The D Jet™ Ion Guide allows you to sample more ions, without a decrease in robustness. Get ready to attain lower levels of quantification and broader coverage, with a linear dynamic range spanning up to six orders of magnitude.

With the OptiFlow® Pro Ion Source, E Lens™ Technology and D Jet Ion Guide, the SCIEX 7500 System will give your laboratory sensitivity gains and flexibility to meet current and future analytical needs. **GO BEYOND** when quantifying those endogenous biomarkers, inhalants, cytotoxic payloads and reach the low level that patient-centric sampling demands.

GO **BEYOND**



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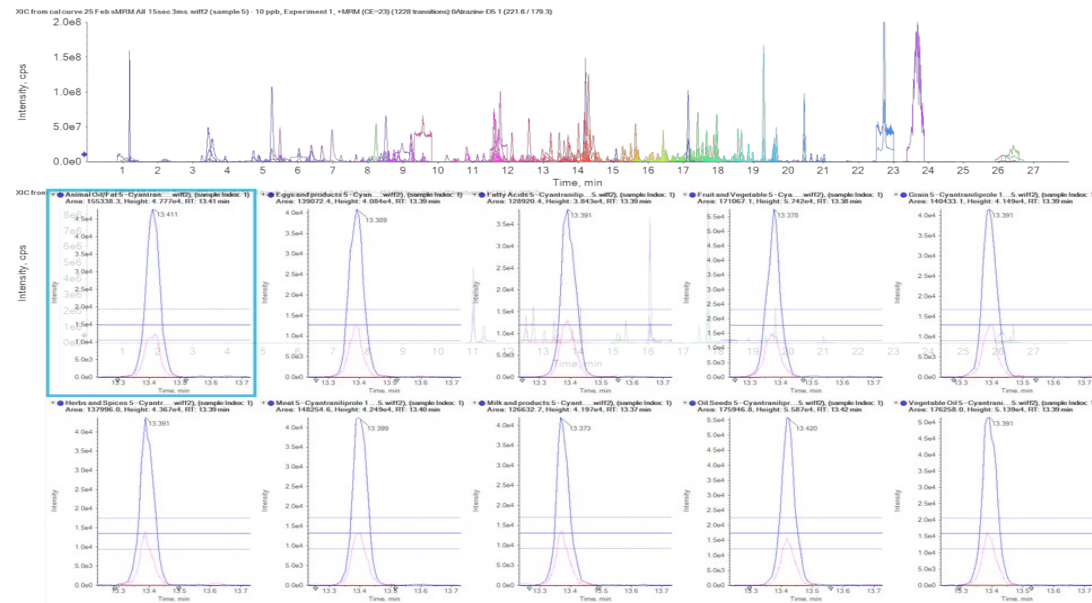
FOOD TESTING

GO BEYOND in the low-level trace detection of residues. Enter the new era of food safety and authenticity. The scope, relevance and level of food safety and authenticity regulations have pushed the need for sensitive analysis. The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready powered by SCIEX OS Software offers you the sensitivity gains to detect the previously undetectable and quantify at lower levels with impressive precision.

Experience a new modularity feature and the reliability and efficiency of the legendary Turbo V™ Ion Source incorporated into the OptiFlow® Pro Ion Source. The integrated E Lens™ Technology built into the OptiFlow Pro Ion Source will boost the transition of crucial ions into the system to quantify a low abundance of analytes.

GO BEYOND current limits of sensitivity, throughput barriers, ruggedness and robustness challenges, and pave the way for your lab to enter the next generation of food testing. The SCIEX 7500 System is robust and rugged to analyze food matrices consistently, batch after batch.

The combination of high-throughput sample preparation procedures applied to 10 different food matrices and a robust detection workflow enabled impressive levels of accuracy, reproducibility and robustness for a variety of food products.



CANNABIS AND HEMP TESTING

The legalization of medicinal or recreational marijuana and hemp has resulted in stringent regulations mandating safety and quality testing before customer consumption. These regulations include analytical chemistry and biological assays to quantify the potency of cannabinoids such as tetrahydrocannabinol (THC) and residual pesticides. These assays are often challenging as your laboratory needs to trace chemical residues at the lowest possible limit.

GO BEYOND the current testing regimes. The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready can help you confidently achieve the low-level residue limits stipulated by regulatory bodies.

Improve the transition of sample extracts into the mass spectrometer with the integrated OptiFlow® Pro Ion Source that contains E Lens™ Technology. Start quantifying low abundance analytes. Expand your laboratory capabilities to test the dirty matrices associated with cannabis samples. The D Jet™ Ion Guide will allow you to characterize analytes that were once masked by matrices, without a decrease in robustness.

Powered by SCIEX OS Software, you can quickly interpret and report sample data. Using features like flagging and outlier tools, experience fast identification of non-conforming samples, which you can revisit for further investigation.

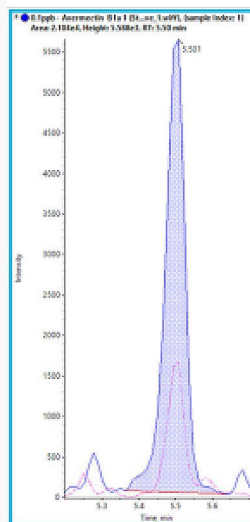
Get ready to **GO BEYOND** and start quantifying more trace analytes at lower levels.

GO **BEYOND**

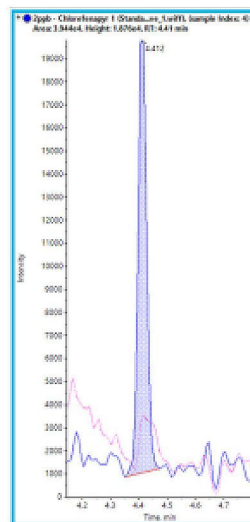
Comprehensive trace level detection of regulated pesticides in cannabis extracts.

A 1uL injection was used

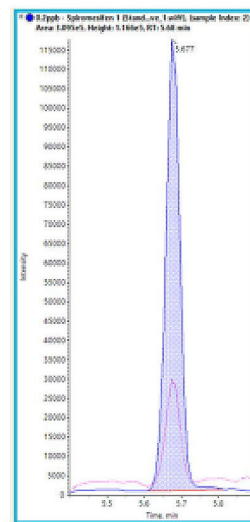
Avermectin
At 0.1 ppb



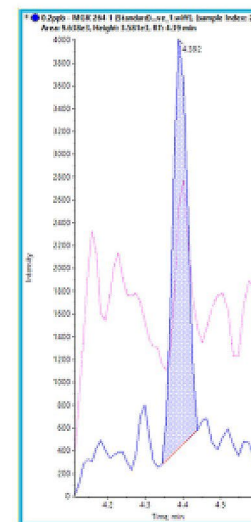
Chlorfenapyr
At 2 ppb



Spiromesifen
At 0.2 ppb



MGK 264
At 0.2 ppb



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ENVIRONMENTAL TESTING

GO BEYOND extensive sample preparation to achieve the ultra-low detection limits required by regulation. Enter the next era of analysis for water quality and environmental testing.

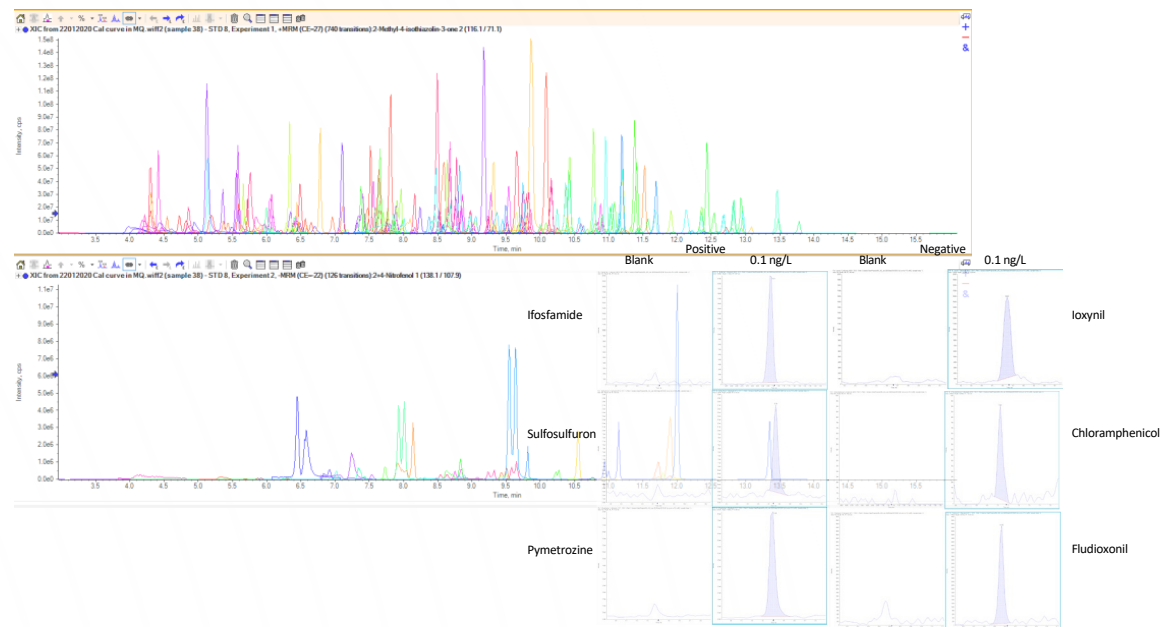
Whether it's pesticides, pharmaceuticals and personal care products (PPCP), or industrial and biological contamination, threats to water quality are pervasive. Water quality monitoring data is critical for detecting environmental pollution.

Expand your laboratory's capabilities to test dirty and complex samples, even analytes that were once masked by matrices, with the OptiFlow® Pro Ion Source built with the E Lens™ Technology and the D Jet™ Ion Guide.

Powered by SCIEX OS Software, the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready will enable you to **GO BEYOND**. Get ready for your water and environmental analysis to reveal the full, detailed quantity of each contaminant or characteristic tested, as low as sub-parts per trillion.

GO **BEYOND**

Fast polarity switching on the SCIEX 7500 System enabled to obtain sub ng/L lower limits of quantification (LLOQ) for the PPCP compounds in the panel without compromising data quality.



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FORENSIC TESTING

Forensic toxicologists must present definite results of evidence. Any data that is reported must stand up to the scrutiny of the law, and your laboratory cannot risk otherwise. The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready will help you **GO BEYOND** your current limits of sensitivity in the detection of forensic drugs in complex biological matrices.

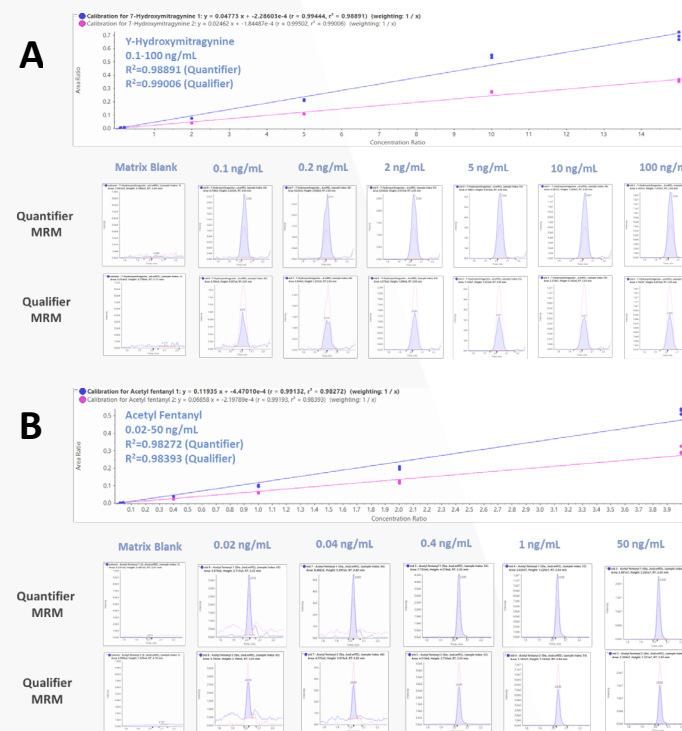
With the OptiFlow® Pro Ion Source integrated with E Lens™ Technology, it's time to expand your laboratory's capabilities. Get ready to detect the previously undetectable and quantify at even lower levels with impressive precision. The D Jet™ Ion Guide allows you to capture and retain more ions than with previous technologies, without a decrease in robustness. Experience sensitivity that helps you to quantify both low-level trace analytes and vastly abundant compounds in the same injection.

Powered by SCIEX OS Software, your laboratory is on the path to consistently deliver fast and precise results. The intuitive software is complete with functionality that can help to build high-quality methods, acquire and process data, and to review and report your evidence analysis efficiently.

GO BEYOND and successfully hit the moving target time after time in your forensic analysis.

GO **BEYOND**

The combination of the efficient sample preparation and the SCIEX 7500 System enabled to obtain sub ng/mL lower limits of quantification (LLOQ) for the vast majority of the compounds in the panel without compromising data quality.



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SCIEX 7500 System

LIFE SCIENCE RESEARCH

As a life science researcher today, you are faced with an exceptional set of challenges. Driven to expand biological coverage to find the next biomarker and run larger cohorts than ever before. It is now crucial to be able to run more complex mixtures and quantify even larger numbers of analytes from a single injection.

The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready helps enable new levels of quantification and faster translation of analytical information to biological knowledge. Built with a flexible ionization source; get full coverage of the diverse, multi-component analyses you require. At the same time, get the peace of mind knowing you can rely on the industry-recognized robustness of SCIEX Triple Quad Systems to protect your precious samples.

GO BEYOND current analytical challenges and meet future quantification needs with greater sensitivity and linear dynamic range spanning six orders of magnitude. With the OptiFlow® Pro Ion Source, life science researchers now have versatility for the breadth of compounds they might be asked to analyze. Together, E Lens™ Technology and the D Jet™ Ion Guide produce next-level sensitivity, extend linear dynamic range, and give access to even larger MRM panels.

CLINICAL RESEARCH

From substantiating discoveries to end-to-end validated workflows for high-throughput biomarker testing, the work you do as a clinical researcher is critical. Speed and robustness, coupled with accuracy, is the key to delivering results. The common theme is the challenge of discovering novel biomarkers and clinical-relevant analytes.

GO BEYOND discovery to verification and validation. Capture a multitude of information within a single analysis with a linear dynamic range spanning up to six orders of magnitude. The integrated E Lens™ Technology works within the OptiFlow® Pro Ion Source to achieve lower limits of quantification. Get ready to produce next-level sensitivity in complex biological matrices, including plasma, serum and urine, with the built-in D Jet™ Ion Guide. These new innovations reduce your sample volume and simplify your sample prep and decrease the need for invasive sampling .

Powered by SCIEX OS Software, the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready will enable you to **GO BEYOND** and put yourself on the path to pioneering discoveries in clinical research.

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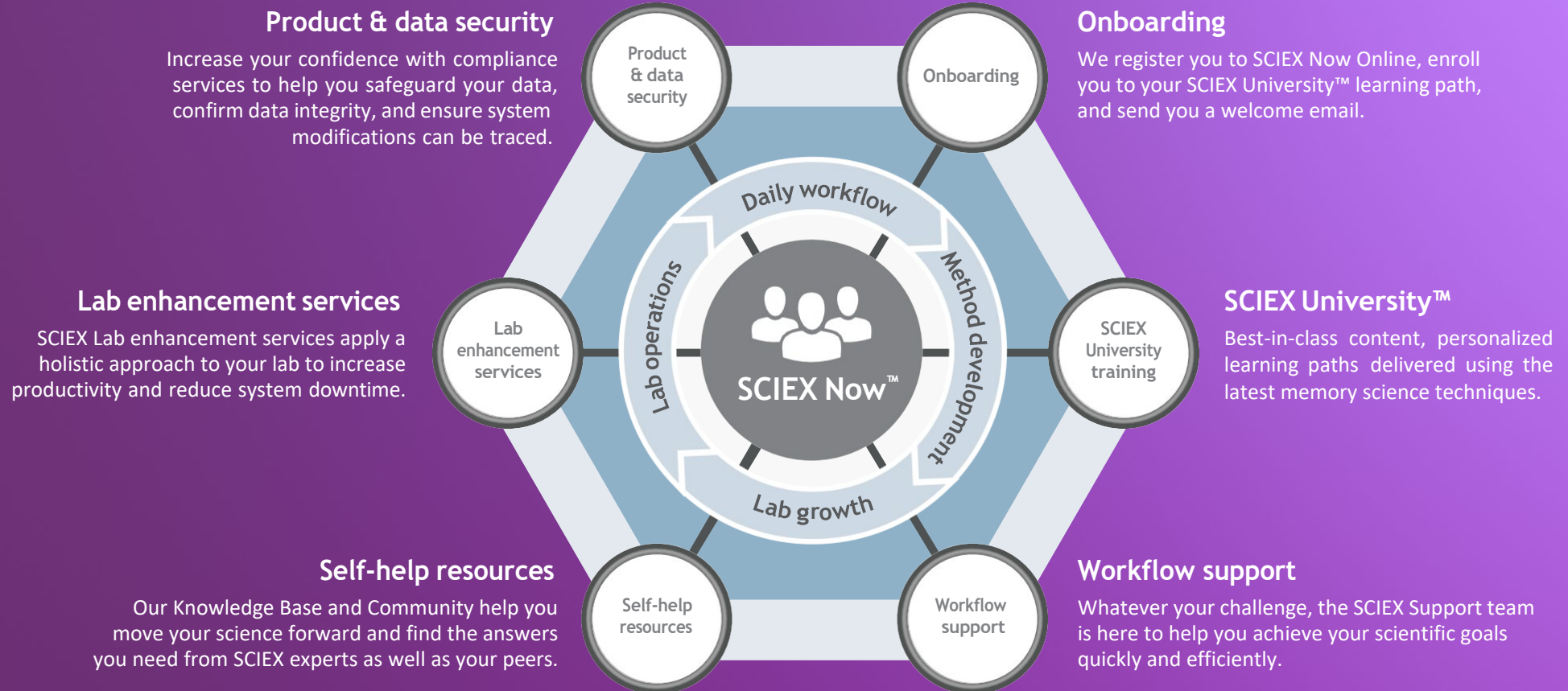
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GO **BEYOND**™

SCIEX Now™ Support Network

The destination for all your support needs



Start Your Path to Success Now: sciex.com/sciexnow

SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready specifications

Description: The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready can enable new levels of quantification across a large suite of sample types and workflows. The D Jet™ Ion Guide will expand laboratory capabilities for testing crude and complex samples and determining key analytes that were previously masked by matrices. The OptiFlow® Pro Ion Source incorporates the reliability and efficiency of the legendary Turbo V™ Ion Source. New modularity allows fast interchanges between high flow and low flow and adapts to workflow requirements. Integrated E Lens™ Technology boosts the transition of crucial ions into the system and increases the potential to quantify more low abundance analytes.

Intended for Research Use Only. Not for Use in Diagnostic Procedures.

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1 Mass spectrometer	
1.1 Analyzer	The instrument must contain a single thin aperture from atmosphere into the vacuum chamber, followed immediately by a patented, high-efficiency dual stage RF-only ion guide for ion focusing and containment. This must be followed by a high pressure RF quadrupole followed by a quadrupole mass filter. A pre-filter must be located between the RF quadrupole and the first mass filter to help further focus the ions. A patented high-pressure quadrupole collision cell with 180° Curved LINAC® Collision Cell technology must follow the first mass filter and be used for high efficiency MS/MS fragmentation. The second mass analyzer must also be a quadrupole mass filter/Linear Accelerator™ Trap.
1.2 Scan types	Full scan MS and selected ion monitoring for both Q1 and Q3, Product Ion Scan, Precursor Ion Scan, Neutral Loss or Gain Scan, Multiple Reaction Monitoring (MRM), Enhanced MS Scan, Enhanced Product Ion Scan, Enhanced Resolution Scan, MS ³ scan, MRM ³ Scan
1.3 Interface	The instrument must have a direct atmosphere-to-vacuum interface module with a curtain gas barrier for maintaining analyzer cleanliness and optimizing ion declustering. It must be capable of analyzing large batches of complex urine, plasma, and plant extracts over long periods of time without maintenance or performance degradation.
1.4 Vacuum system	The instrument must have a differentially pumped vacuum system featuring air-cooled turbo molecular pumps with fail-safe vacuum system protection. It must automatically shut-down and restart after power failures.
1.5 Detector	The instrument must have a detection system that is capable of rapidly switching between positive and negative ion detection. The detector system combines a high energy dynode (HED) with a channel electron multiplier (CEM) detector for improved performance.
1.6 Source exhaust	The instrument must have an active source exhaust for the removal of gasses within the ionization source.

2 System performance	
2.1 SCIEX Triple Quad™ mass range	The instrument must have a mass range (m/z) of 5-2000 Da.
2.2 Linear ion trap mass range	The instrument must have a mass range (m/z) of 50-2000 Da in linear ion trap mode.
2.3 SCIEX Triple Quad™ scan speed	The instrument must have a maximum scan speed of 12,000 Da/sec in triple quadrupole mode.
2.4 Linear ion trap scan speed	The instrument must have a maximum scan speed of 20,000 Da/sec in linear ion trap mode.
2.5 Polarity switching	The instrument must be able to switch ionization mode polarity with a 5 msec settling time between polarities. The instrument is able to do this continuously.
2.6 Dynamic range	The instrument must have a dynamic range of 6 orders of magnitude from the limit of detection (LOD). The dynamic range is dependent on analyte and experimental conditions.
2.7 Mass stability	The instrument must have a mass stability of 0.1 Da over 24 hrs with normal operating temperature and after it has reached vacuum and electronics equilibrium.
2.8 Crosstalk	The instrument must have no significant crosstalk detectable for reserpine (0.17 pmol/μL infused) while monitoring the MRM transitions of 609/195 and 100/195 with a 1 msec dwell time and 3 msec inter-MRM pause time.
2.9 MRM dwell time	The minimum MRM dwell time must be 1 msec.
2.10 MRM acquisition rate	The maximum acquisition rate must be 500 MRM/sec.

2.11 Fast MRM scanning	<p>The difference in response for reserpine (MRM transition of 210/64) with 2 msec dwell and 3 msec inter-MRM pause time vs. 50 msec dwell with 5 msec inter-MRM pause must be < 10%.</p>
2.12 Positive mode ESI sensitivity	<p>Using the ESI probe in MRM mode on the transition m/z 609 to 195 for a 1 pg reserpine injection on column, at unit mass resolution (0.7 ± 0.1 Da at half height), the instrument must have a S/N > 1,600,000:1. S/N measurements are calculated based on 1 standard deviation of at least 3 points of noise which produce the smallest standard deviation, after applying up to 3 Gaussian smooths. S/N ratio does not imply the limit of detection (LOD) or limit of quantification (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p>
2.13 Negative mode TIS sensitivity	<p>Using the ESI probe in MRM mode on the transition m/z 321 to 152 for a 1 pg chloramphenicol injection on column, at unit mass resolution (0.7 ± 0.1 Da at half height), the instrument must have a S/N 1,600,000:1. S/N measurements are calculated based on 1 standard deviation of at least 3 points of noise which produce the smallest standard deviation, after applying up to 3 Gaussian smooths. S/N ratio does not imply the limit of detection (LOD) or limit of quantification (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p>
2.14 Positive mode reproducibility	<p>Using the ESI probe in MRM mode on the transition m/z 609 to 195, for 10 replicate injections of 0.5 fg of reserpine on column, the standard deviation of the peak area must be less than 10%.</p>
2.15 Negative mode reproducibility	<p>Using the ESI probe in MRM mode on the transition m/z 321 to 152, for 10 replicate injections of 0.5 fg of chloramphenicol on column, the standard deviation of the peak area must be less than 10%.</p>
2.16 Positive mode APCI sensitivity	<p>Using the APCI probe in positive ionization mode, for reserpine (2 pg/μL, 5 μL fixed loop injection, 1.0 mL/min), monitoring 609/195 MRM transition, the instrument must have a S/N > 200,000:1, where the noise is defined as the standard deviation of the baseline. S/N ratio does not imply the limit of detection (LOD) or limit of quantification (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p>

2.17 Negative mode APCI sensitivity	Using the APCI probe in negative ionization mode, for 5-fluorouracil (10 pg/ μ L, 5 μ L fixed loop injection, 1.0 mL/min), monitoring 129/42 MRM transition, the instrument must have a S/N > 10,000:1 where the noise is defined as the standard deviation of the baseline. S/N ratio does not imply the limit of detection (LOD) or limit of quantification (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.
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2.18 Positive mode EPI sensitivity	Using the ESI probe in Enhanced Product Ion mode (product of 609.3), a 10 fg reserpine injection on column, the instrument must have a S/N > 200:1, where the noise is defined as the standard deviation of the baseline. S/N ratio does not imply the limit of detection (LOD) or limit of quantification (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.
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2.19 Positive mode MRM3 sensitivity	Using the TurbolonSpray probe on the MRM ³ transition of 609.3/397/365 for a 10 fg reserpine injection on column with a scanning cycle time of <200 msec, the instrument must have a S/N > 30:1 where the noise is defined as the standard deviation of the baseline. S/N ratio does not imply the limit of detection (LOD) or limit of quantification (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.
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2.20 Resolution in LIT mode	Scan speed	Resolution	Resolution
	(Da/sec)	<i>m/z</i> 354	<i>m/z</i> 922
	1,000	1080	3100
	10,000	540	1540
	20,000	460	1320

3 OptiFlow™ Pro Ion Source

3.1 Functionality

3.1.1 The ionization source will support both ESI and APCI.

3.1.2 The ionization source will support positive / negative switching.

3.1.3 The ionization source will be interchangeable between ESI and APCI in less than 2 minutes, without any tools.

3.1.4 The ionization source will be fully replaceable in less than 2 minutes, without any tools.

3.1.5 The ionization source will be compatible with flow rates from 1 μ L/min to 3mL/min, without splitting.

3.1.6 The ionization source will support user selectable desolvation temperatures up to 750°C in 1°C increments.

3.1.7 The ionization source will have a user selectable nebulizer gas setting from 0 psi to 90 psi in 1 psi increments. Zero grade air recommended.

3.1.8 The ionization source will be automatically recognized and configured when installed on the instrument.

3.1.9 The probes will be automatically recognized and configured when installed in the ionization source.

3.1.10 The ionization source will be compatible with solvents from 100% aqueous to 100% organic with up to 1% acid or base.

3.1.11 The ionization source along with the host instrument meet the applicable safety requirements as provided in safety standards CSA/UL/EN 61010-1.

3.1.12 The ionization source will have a micro column heater that directly couples to the probe to reduce post-column band spread when operating micro flow rates.

3.1.13 The micro column heater temperature will be user settable from ambient +5°C to 90°C in 1°C increments.

3.1.14 The micro column heater temperature precision will be +/- 0.5°C at 50°C

3.1.15 The micro column heater temperature accuracy will be +/- 1°C at 50°C

3.1.16 The micro column heater time to temperature will be less than 25 min when heating from ambient +5°C to 80°C.

3.1.17 The time to replace a micro column will be less than 2 minutes in the micro column heater.

3.1.18 The ionization source will have a viewing window for verifying cleanliness and spray integrity.

3.1.19 The ionization source will require no manual adjustments for alignment.

3.1.20 The APCI probe will have a corona discharge current that is user selectable from -5 μA to +5 μA in 0.1 μA increments.

3.1.21 The ionization source will have orthogonal spraying for improved robustness.

3.1.22 The ionization source will have a standard device that enhances the ion transmission efficiency into the instrument (E Lens).

4 Software and operating system	
4.1 Data system	
4.1.1	The system must include a Windows-based data acquisition and editing software package that incorporates a graphical user interface utilizing multi-pane windows for easy data acquisition and analysis.
4.1.2	The system must be compatible with a variety of commercially available LC pumps, autosamplers, and detectors.
4.1.3	The software must provide a tool for adjusting the retention time for acquiring MRM transitions such that only compounds that elute within a specified time window are monitored. In addition, the process of creating the acquisition method to utilize this feature must accept a simple list of compound names, MRM transitions, and expected retention times and use this list to dynamically schedule MRM scans during the experiment. (Scheduled MRM™ Algorithm).
4.1.4	The software must have e-signature and audit trail tools available to help organizations achieve 21 CFR Part 11 compliance.
4.1.5	The software must perform real time analyses and corrective actions while acquiring samples.
4.2 Data processing software	
4.2.1	The system software must have powerful quantification algorithms.
4.2.2	The system software must provide a variety of quantification algorithms to choose from.
4.2.3	The system software must include powerful library generation and search capability (searches based on mass spectra at different fragmentation voltages and different polarities).
4.2.4	The system software must be able to generate a contour plot display for mass and UV spectra.
4.2.5	The system software must have a Fragmentation Interpretation Tool module.
4.2.6	The software must have completely automated quantitative data processing and reporting capabilities.
4.2.7	The software must have direct and easy data transfer to popular word processing programs such as MS Word, Excel, Secured PDF, etc.

4.2.8 The software must be fully automated including customized data processing.

4.2.9 The software must be able to flag and filter results to automate data review.

4.2.10 The software must be able to transfer results to LIMS systems such as Watson LIMS.

5 Physical specifications				
5.1 Size and weight (excluding roughing pumps)				
Equipment	Height	Width	Length	Weight
Crate	89 cm (35 inches)	115 cm (45 inches)	109.5 cm (43 inches)	84 kg (185 lbs.)
Mass spectrometer	61 cm (24 inches)	79 cm (31 inches)	95 cm (38 inches)	142.5 kg (315 lbs.)
Roughing pump 1	53.8 cm (21.2 inches)	51.6 cm (20.3 inches)	75.0 cm (29.5 inches)	106 kg (238 lbs.)
Roughing pump 2	23 cm (9 inches)	30 cm (12 inches)	42 cm (17 inches)	34 kg (75 lbs.)
Mass spectrometer bench (optional)	77 cm (30 inches)	105 cm (41 inches)	95 cm (38 inches)	85 kg (187 lbs.)
Gas generator bench (optional)	77 cm (30 inches)	92 cm (36 inches)	79 cm (31 inches)	120 kg (264 lbs.)
Accessories crate	129.5 cm (51 inches)	104 cm (41 inches)	132 cm (52 inches)	178 kg (391 lbs.)
5.2 Power	The instrument must be powered by three separate 15 A, 200 VAC to 240 VAC (typical 208), 50 Hz or 60 Hz. Receptacles must be equipped with CSA/NEMA 6-15R straight blade receptacles.			
5.3 Power consumption	The instrument, including roughing pump, must only consume 6840 VA maximum.			
5.4 Gas supplies	High purity nitrogen at 60 psi (maximum consumption of 26 L/min at 60 psi) must be used for the gas flow for the Curtain Gas™ Interface. Zero grade air or high purity nitrogen should be used for the ion source. Maximum combined consumption must be 26 L/min at 100 psi. Filtered, dry air (free from oil) at 60 psi must be used for the ion source exhaust pump with a max flow rate of 25 L/min.			
5.5 Exhaust	The instrument must use a vent to remove ion source and rotary vane pump exhaust from the instrument.			
5.6 Lab environment	To ensure the proper operating conditions for the instrument, the environmental conditions must be maintained between 15°C and 30°C (59–86°F) stable within ±4°C (7.2°F) with a relative humidity between 20–80% non-condensing. The air conditioning requirement is approximately 10,500 Btu/h for the main console, roughing pumps and heat load from the ion source.			

Disclaimer: These specifications are not standard installation specifications for the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready. The SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready is tested and installed in accordance with standard performance tests as described in the SCIEX Triple Quad™ 7500 LC-MS/MS System – QTRAP® Ready Installation Checklist and Data Log.

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Sciex Triple Quad 7500 LC-MS/MS System – QTRAP Activated

Mandatory Components:

- Sciex Triple Quad 7500 System – QTRAP Activated
- Sciex OS 2.1 Acquisition and Qual/Quant Processing Perpetual License
- ESI Tower
- OptiFlow Pro Ion Source – Microflow Bundle
- MS and LC Instrument Benches
- Genesis Genius XE SCI 2 Gas Generator
- PowerVar Security Plus II 8000VA UPS
- Sciex Workstation
- Peak Dual Tap Transformer
- Sciex OS-Q 2.1 Qual/Quant Processing Perpetual License
- Microsoft Office 2016 Profession Plus
- Sciex LibraryView 1.3 Spectral Library Tools
- Sciex Success Master Instrument Training
- Valve FCV-DR
- Valve FCV-0206H3
- IDEX Fittings Kit
- Pump LC-40DX3 HPLC (2)
- Piping Kit B for High Pressure Gradient
- Nexera SIL-40CX3 Autosampler
- Auxilliary I/O Cable Assembly
- SIL Installation Kit
- DGU-405 Degasser
- SCL-40 Communication and Control Module
- 10/100 Ethernet Switch
- CAT6A Shielded Network Cable
- 40 Series Cable Kit
- CTO-40C Column Oven
- Micro Mixer
- LC Solvent Bottles
- Solvent Bottle Caps
- Cord Set