6495C LC/MS

Технические характеристики

The Highest Level of Confidence

Your samples are precious and turnaround time is critical to the success of your organization. A sensitive, yet rugged instrument that provides day-in, day-out performance is the cornerstone of your workflow. The Agilent 6495C Triple Quadrupole LC/MS system is at the forefront of robustness, reliability, and accuracy, which makes it a perfect option for many applications, including peptide quantitation, food safety, environmental testing, clinical research, and forensics.

iFunnel technology

Provides unprecedented analytical sensitivity and precision at low intensities, featuring a third-generation proprietary design.

Q1 ion optics

Reduces contamination and enables lower limits of detection by increasing ion transmission efficiency to the Q1 mass filter.

Ion detector

Increases analytical sensitivity and quantitation across a wide mass range using a high energy conversion dynode with low noise characteristics.

VacShield

Enables quick and seamless capillary maintenance without venting the instrument, minimizing instrument maintenance downtime.

Curved collision cell

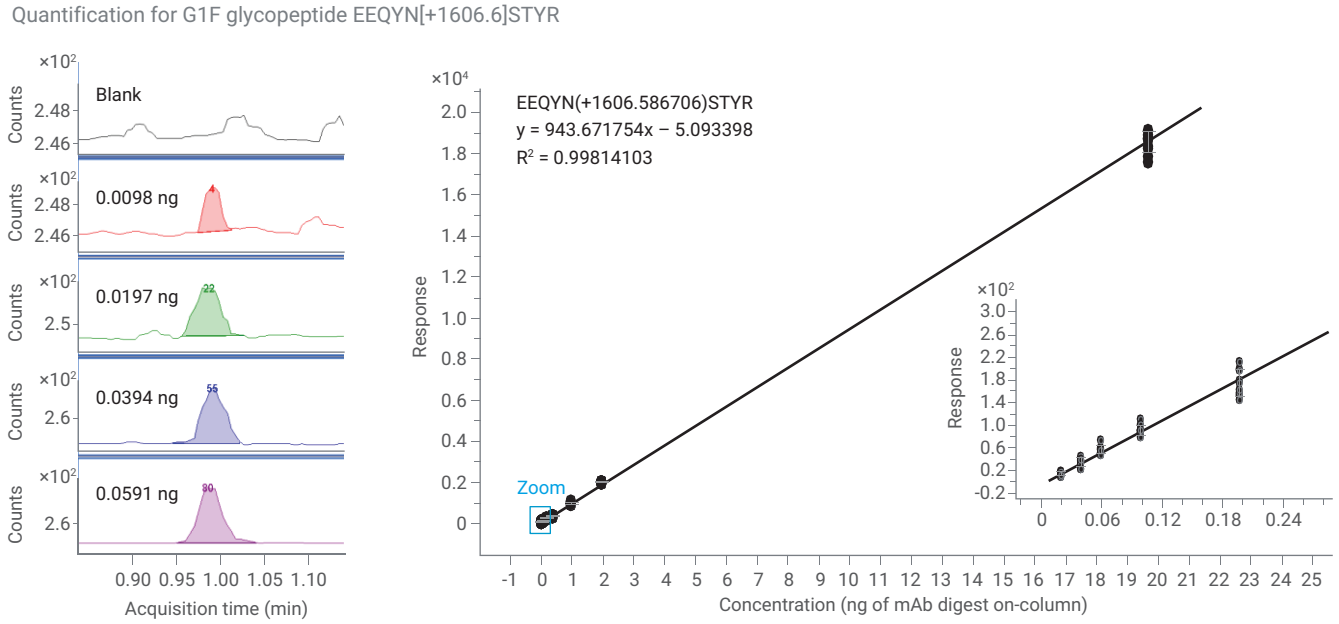
Facilitates efficient collection and transmission of fragment ions while eliminating cross-talk.

Targeted Proteomics

Peptide identification and quantification

High *m/z* peptide ions are extremely descriptive and provide important biological information concerning size and location of post-translational modifications (PTMs) such as glycosylation or phosphorylation.

The Agilent 6495C Triple Quadrupole LC/MS system has a mass range that extends to *m/z* 3,000, which is beneficial in detecting large peptide fragments. Here we demonstrate the utility of the 6495C for detecting fragment-ion signals arising from a peptide in a targeted protein of interest. This approach is extremely sensitive, highly reproducible, and quantitatively precise.

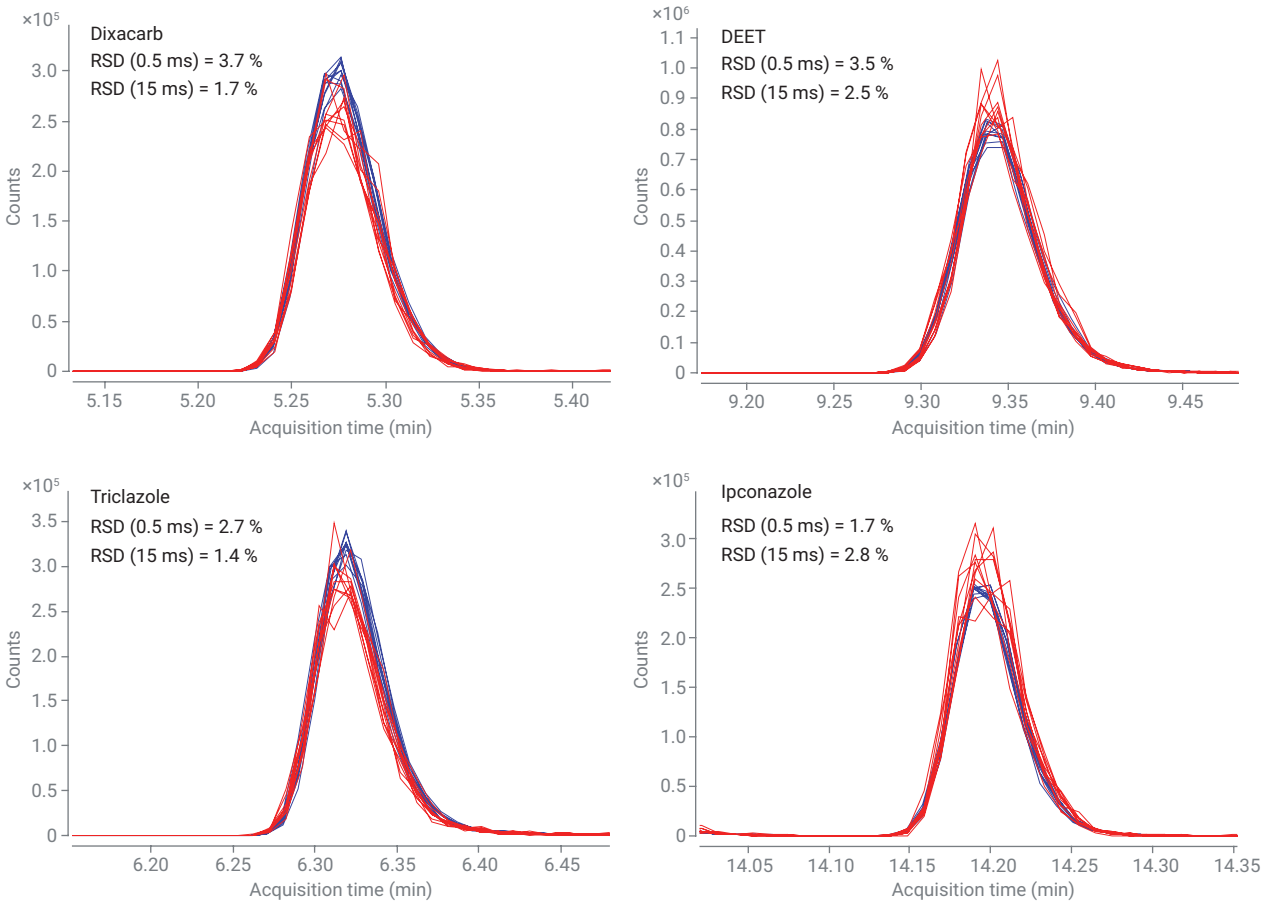


Food Testing: Pesticides

Evaluation of optimized inter-MRM delay times

The global nature of food commodities has prompted increased scrutiny concerning safety and origin. Recent contamination issues stemming from use of illegal pesticides and adulterants have negatively affected consumer confidence. To meet this challenge, triple quadrupole LC/MS is used to simultaneously monitor hundreds of potential contaminants.

Here, an MRM method was developed to target pesticide residues. The exceptional analytical sensitivity afforded by the Agilent 6495C Triple Quadrupole LC/MS system enabled precise and accurate quantitation of these compounds, even at the fastest dwell times.



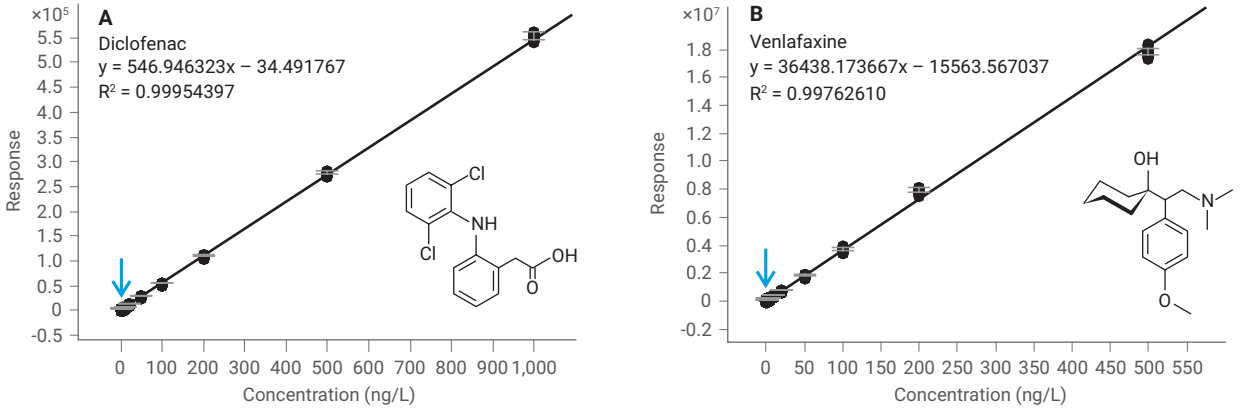
A comparison of an analysis for various pesticides acquired at 15 ms and 0.5 ms dwell times (20 pg on-column).

Environmental Water Analysis

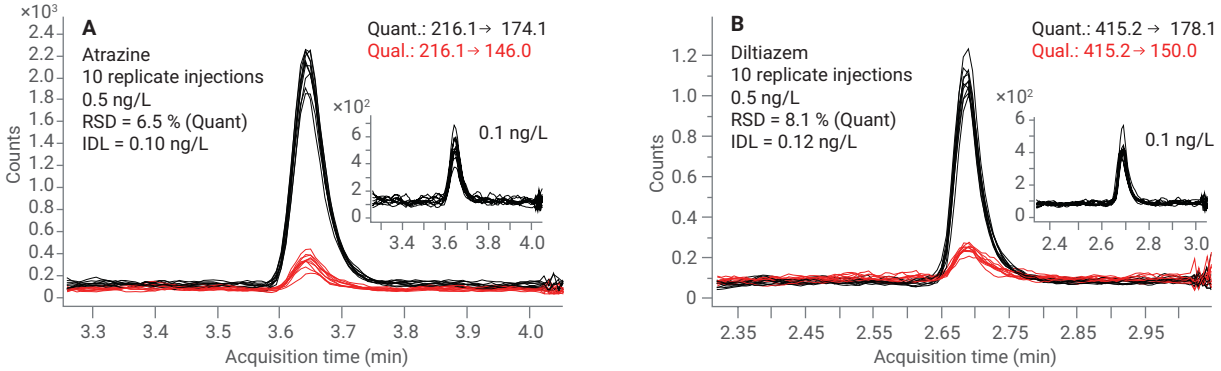
Accuracy and precision for analysis of PPCPs in water

Worldwide, scientists are monitoring trace amounts of compounds from pharmaceuticals and personal care products (PPCPs) in our drinking water. PPCPs are extremely diverse and are often unique to a geographical region. These compounds (active ingredients, byproducts, and metabolites) are often not completely removed during the water-treatment process. That means that contaminants can leech into ground and surface water, collectively the major source of drinking water for a wide variety of species.

The 6495C Triple Quadrupole LC/MS system enables direct injection of water samples without sample pre-concentration. The results show screening and quantitation of PPCPs in surface water samples at levels that extend to 0.5 ng/L and below.



Calibration plots for diclofenac (negative mode) and venlafaxine (positive mode) in water evaluated for quantitation accuracy and peak area RSD.

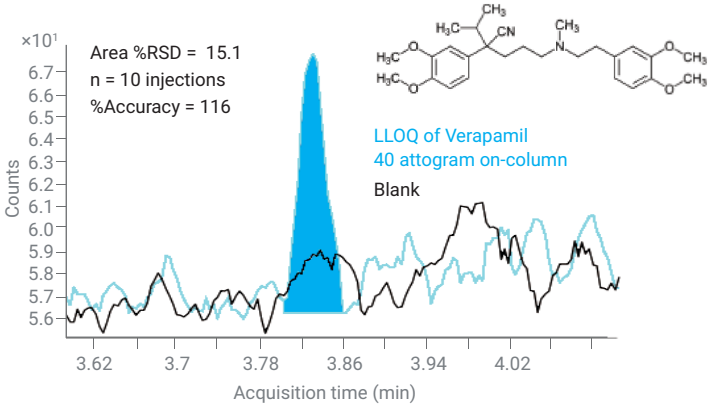


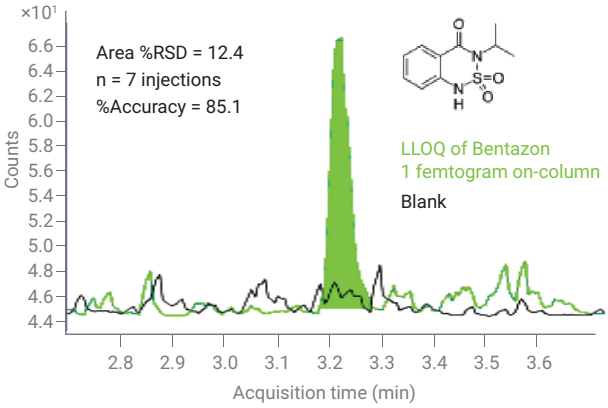
Overlaid MRM chromatograms for two example PPCPs evaluated in this study at 0.5 ng/L. Reproducible responses (RSD% <10 %) were observed for both quantifier and qualifier ions of atrazine (A) and diltiazem (B) at sub-ng/L concentrations.

Instrument Detection Limit

Enhanced analytical sensitivity and precision yields the lowest limits of detection and quantitation

Greater ion collection and ion transmission efficiency yields better assay performance. A next-generation iFunnel design, superior ion optics, and highly synchronized electronics control have drastically improved the analytical sensitivity of the 6495C. This means better detectability and improved precision at low analyte levels.



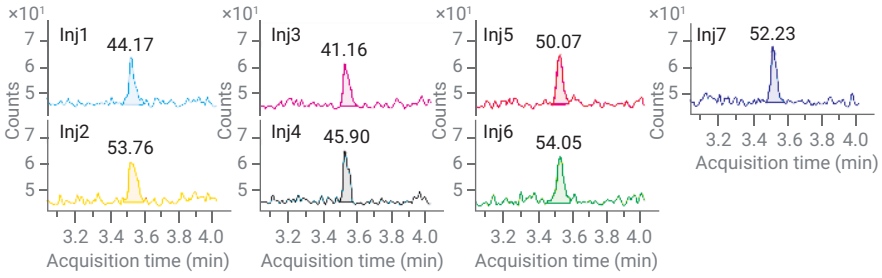


A meaningful measure of analytical sensitivity

Today's low-noise mass spectrometry systems demand a rigorous statistical standard that measures the true analytical sensitivity of the system; a specification proportional to ion count. Agilent is leading the way with an innovative method to effectively determine system performance—instrument detection limit (IDL).

Estriol Amount Measured	Replicates	%RSD	t(99 %)	Estriol IDL
5 pg/mL (LLOQ)	n = 7 injections	11.3	3.143	1.8 pg/mL

MDL = t × (%RSD/100) × Amount = 3.143 × (10.4/100) × 25 fg = 1.8 pg/mL



More ions = better precision

- IDL is a rigorous metric based on statistical analysis of response precision (%RSD)
- Measured at or close to the limit of detection (LOD)
- Provides an accurate assessment of the system's true detection limit and LLOQ
- A uniform and practical means of evaluating analytical sensitivity

Where Solutions Come Together

The best solutions don't come together by accident. Decades of experience designing mass spec systems gives us a clear advantage, but we refuse to rest on reputation. We continually engage in groundbreaking collaborations with thought leaders in chemistry and the life sciences, and we never stop learning from longstanding partnerships with analytical laboratories in every field.

Agilent 1290 Infinity II LC system

A mass spec as powerful as the 6495C requires the best performing liquid chromatograph. Agilent offers the most comprehensive portfolio of analytical LC systems optimized for unparalleled performance when interfaced to an MS. The 1290 Infinity II LC delivers ultra-high performance liquid chromatography with superior reliability and is the perfect match for Agilent's LC/MS portfolio, including the 6495C.

Each 1290 Infinity II module is optimized to deliver the highest level of efficiency from sample introduction to separation and detection. These modules also maximize sample capacity and deliver the fastest injection cycles and pump performance. The 1290 Infinity II LC coupled with Agilent's LC columns and supplies offers the most comprehensive solutions for LC/MS available today.

Efficient sample preparation and columns

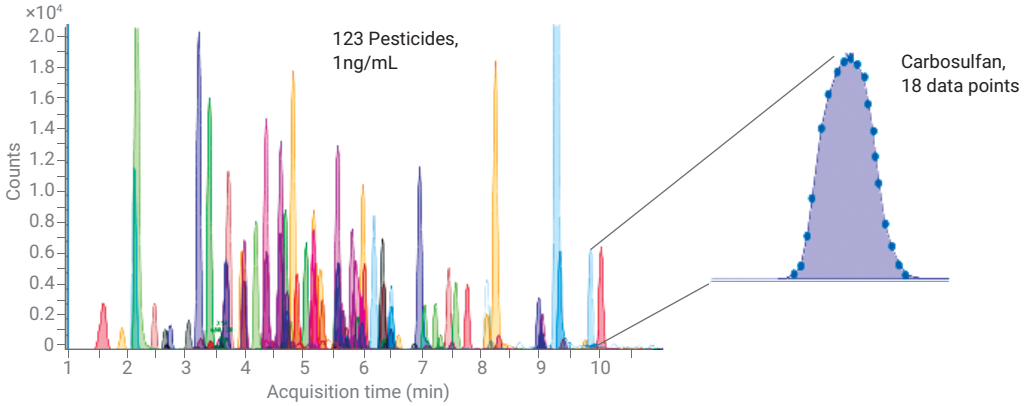
Agilent Bond Elut SPE columns and QuEChERS sample preparation provide rugged, reliable sample cleanup to minimize matrix interferences and reduce sample-related system maintenance, improving system performance and analytical analytical sensitivity. InfinityLab Poroshell 120 columns provide exceptional efficiency, speed and resolution for reliable, reproducible results. Twelve chemistries, including HPH-C18 for high pH applications, allow you to achieve the optimal separation for any sample.

The Agilent 1290 Infinity II liquid chromatography system, Agilent Bond Elut SPE, and InfinityLab Poroshell 120 columns.

Agilent MassHunter Software

High analytical sensitivity MRM at the fastest analysis times with dynamic MRM

The analysis of multiple compounds in targeted applications requires the ability to intelligently schedule multiple MRMs while maintaining high analytical sensitivity at short MRM dwell times. Dynamic MRM sets optimal dwell times to allow confident analysis of a large panel of compounds while producing enough data points across the peak for precise and accurate quantitation.



MassHunter software

Agilent MassHunter software simplifies sample management, MS method optimization, data processing, and data reporting for quantitative analyses. An impressive suite of tools facilitates sample analysis, particularly for routine quantitation.

These tools include:

- Optimizer software delivers automated determination of MRM transitions for quantitation and optimized collision energies for each analyte
- Dynamic MRM (dMRM) ensures the best possible quantitative results for multi-analyte assays compatible with fast UHPLC separation, by specifying cycle times and allowing the software to determine the maximum dwell time for each MRM transition
- Triggered MRM (tMRM) data-dependent acquisition allows fast analyte quantitation together with compound confirmation at the lowest assay levels

High quality MS application solutions

Simplify your startup and quickly set up a method for your specific application.

Veterinary drug tMRM database

Our curated database includes over 650 compounds, with up to 10 MRM transitions, fragmentor voltages, and collision energies for each compound, so you can instantly build methods for targeted screening and confident quantitation for hundreds of analytes in a single run.

Pesticides tMRM database for triple quadrupole LC/MS

Agilent's pesticide tMRM database for LC/TQ systems contains over 750 compounds, with up to 10 MRM transitions, fragmentor voltages, and collision energies for each. The database enables you to instantly build methods for targeted screening and confident quantitation for hundreds of analytes in a single run.

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Россия (495)268-04-70
Киргизия (996)312-96-26-47
Казахстан (7172)727-132

afr@nt-rt.ru || https://agilent.nt-rt.ru/