Agilent 6100 Series Single Quadrupole LC/MS Systems

Clearly better confidence, performance, throughput,

with day-after-day reliability

Our measure is your success.

products | applications | software | services

Agilent Technologies

Step up to Clearly Better sensitivity, selectivity, and high-quality spectral information

From routine QC to research applications, Agilent 6100 Series Single Quadrupole LC/MS Systems deliver unmatched analytical performance and proven day-after-day reliability. Available with performance characteristics to match your needs and budget, they offer best-in-class data quality in a space-saving benchtop package.

For more than 40 years, Agilent's single-quadrupole technology has earned a reputation for robustness and dependability in pharmaceutical and chemical analysis laboratories around the world. The easy-to-use 6100 platform gives you the capability to:

- Rapidly screen compounds and confirm molecular weights
- Purify target compounds in complex mixtures
- Quantitate target compounds
- Identify impurities

To maximize your return on investment, the performance capabilities of Agilent 6100 Series LC/MS systems can be easily upgraded to keep pace with your future requirements.

Unmatched analysis speed boosts productivity

- Faster acquisition speeds let you take full advantage of the higher throughput of today's faster chromatography.
- Ultra-fast ion polarity switching lets you obtain both positive and negative spectra, providing maximum information from a single injection—even for narrow LC peaks.
- Faster injection-to-injection cycle time—less than 10 seconds—lets you run more samples per hour.

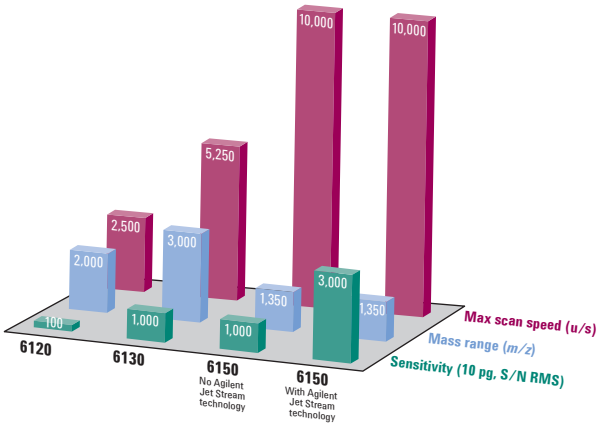
Advanced analytical capabilities increase confidence

- Even at scan speeds up to 10,000 u/sec (6150 system), you get excellent spectral quality with accurate isotope ratios for more confident compound identification and confirmation.
- Variable-energy, in-source, collision-induced dissociation (CID) provides valuable structural information.
- Multi-signal capability lets you acquire more information from a single injection.

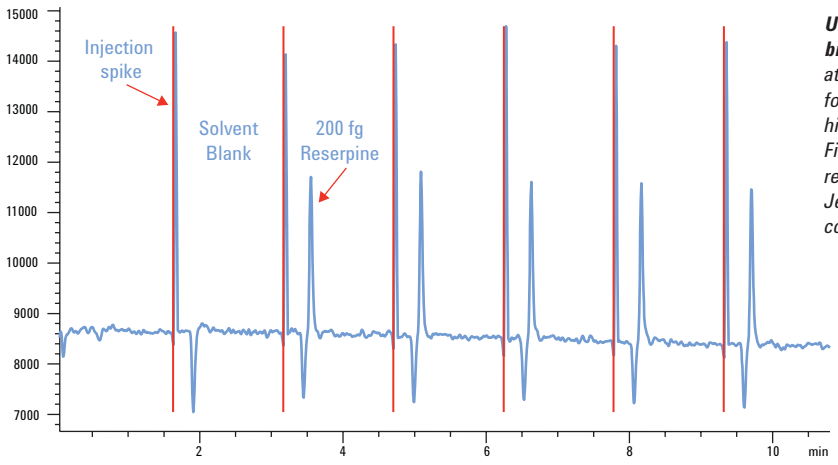
Simple, intuitive operation saves time and improves results

- Intuitive Agilent ChemStation software lets you set up and control the LC and MS from a single screen.
- Agilent's powerful Autotune feature boosts productivity by eliminating the need for manual recalibration.
- Comprehensive automation features allow multi-user, walk-up sample submission and unattended operation.

Choose from three upgradable configurations to meet your application and performance needs



Agilent 6100 Series Single Quadrupole LC/MS Systems	
6120	Budget-friendly and very easy to use—with Agilent's 1120 Compact LC, a perfect workhorse addition for labs just getting into LC/MS.
6130	Highly flexible, high-performance solution ideal for any quantitation application, offering 3000 amu mass range and 1 pg sensitivity.
6150	Unsurpassed data quality for UHPLC and high-throughput screening and qualitative applications, with faster scan speed (10,000 u/sec) and the power of Agilent Jet Stream technology.



Unmatched sensitivity and broader ionization capabilities *at LC flow rates up to 2 mL/min for ultra-fast chromatography and high-throughput applications. Five replicate injections of 200 fg reserpine on-column with Agilent Jet Stream technology. Data collected on a 6150 system.*

Hardware innovations and optimized components add up to Clearly Better performance

The ion sources, ion optics, vacuum system, and electronics for the 6100 Series LC/MS instruments have been optimized to deliver outstanding speed, sensitivity, and reproducibility—plus, of course, legendary Agilent reliability.

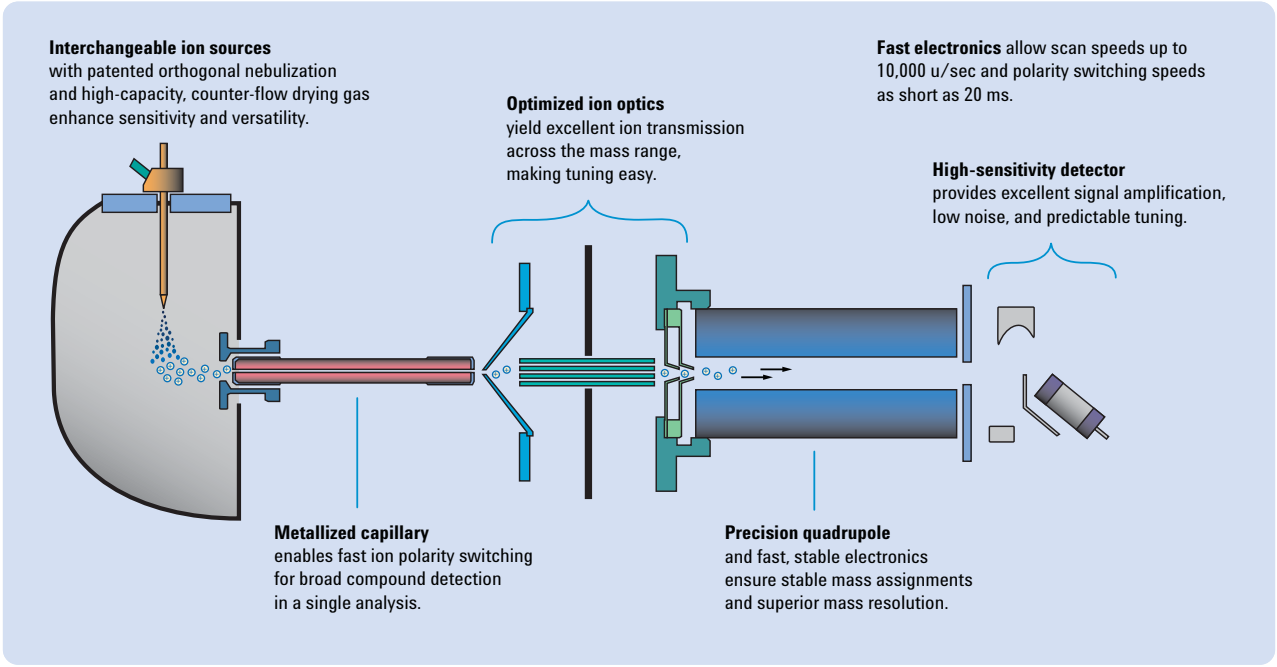
The ideal MS complement to Agilent's 1290 Infinity LC System

The 6100 Series LC/MS integrates seamlessly with the Agilent 1290 Infinity LC System. It lets you take full advantage of the faster speed of UHPLC separations—so you can capture all the information in even the narrowest LC peaks. For maximum analytical versatility, the system delivers superior sensitivity, reproducibility, and spectral quality even at very high flow rates and over a wide range of mobile-phases and mobile-phase additives.

Multi-signal capability lets you analyze more compounds per run

Within a single injection, you can perform:

- Polarity switching to obtain both positive and negative spectra.
- Variable energy, in-source, collision-induced dissociation (CID) for more structural information.
- Selected ion monitoring (SIM) to quantitate target compounds or find trace compounds, while also scanning to obtain full spectra.



Ultra-fast ion polarity switching increases productivity

Using scan-by-scan switching between positive and negative ionization, you can rapidly screen unknown samples without having to determine the optimum polarity in advance. Standard in all three 6100 LC/MS systems, this powerful capability makes it possible to obtain high-quality positive and negative spectra—even with ultra-fast chromatography and narrow chromatographic peaks.

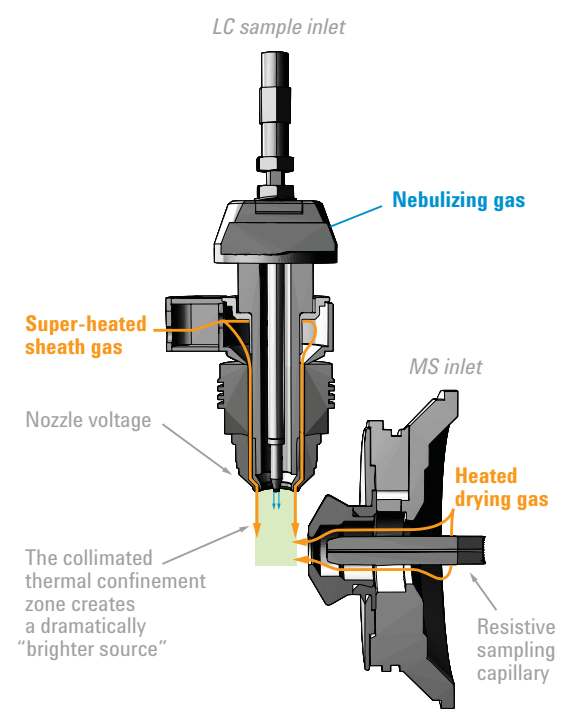
Widest range of ionization sources

Agilent offers the industry's widest selection of interchangeable ion sources. So no matter what class of molecule you're analyzing, you can match ionization mode and instrument to your compounds of interest. Choices include:

- Electrospray (ESI) at standard, microliter, and nanoliter flow rates—for biological macromolecules and small polar molecules.
- Atmospheric pressure chemical ionization (APCI)—for less polar and non-polar molecules.
- Atmospheric pressure photoionization (APPI)—for compounds that ionize poorly by ESI and APCI.
- Multimode ESI/APCI—innovative Agilent technology that enables true simultaneous electrospray ionization and atmospheric pressure chemical ionization, eliminating the need to run samples twice to ensure all components are identified.

Agilent Jet Stream Technology

Available on the 6150 system, innovative thermal gradient focusing enhances sensitivity by maximizing nebulization and desolvation and reducing ion dispersion at conventional LC flow rates—delivering many more ions to the mass spectrometer, while simultaneously reducing the number of neutral solvent clusters. The result is higher intensity signals with lower RSDs at the limit of detection for a broader range of compounds.



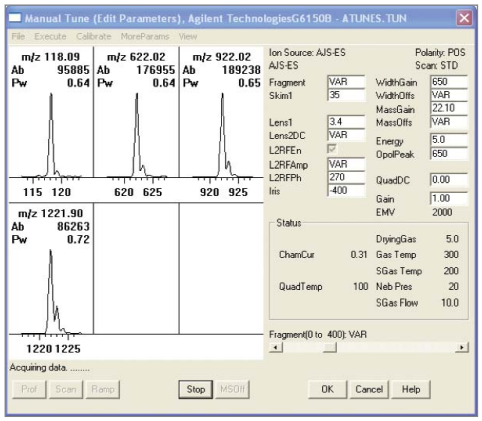
Simpler, more powerful software and faster answers

Agilent's ChemStation LC/MS software integrates control of all LC and MS operating parameters under a single, intuitive interface. Featuring automated setup and streamlined data acquisition, data review, and result reporting, the software enhances all aspects of system operation and ensures better, more meaningful data from every experiment.

Exceptionally easy setup

Whether you are new to LC/MS or a seasoned expert, Agilent LC/MS ChemStation software simplifies and speeds the operation of your 6100 Series LC/MS system.

- Autotune tuning and calibration and automated calibrant delivery makes setup quick and easy; of course, you can also set parameters manually.
- Sequencing software helps you quickly create and modify sequences, chain sequences together, and change the order of samples while a sequence runs.



Simple and completely automated tuning.

- Convenient Peak Purity tool displays UV and mass spectral data together to better identify chromatographic peaks containing unresolved compounds; this helps you develop separation methods and choose quantitation ions without having to refine the separation.

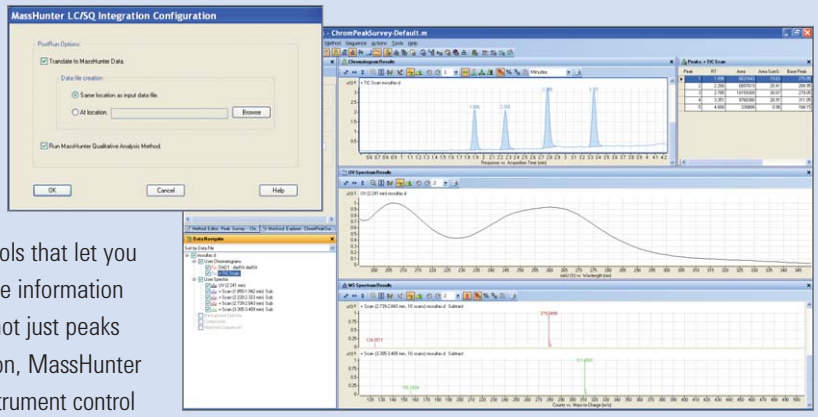
Exceptionally fast answers

For both qualitative and quantitative analysis, LC/MS ChemStation software gives you a shorter path to the information you're looking for.

- Choose from a variety of quantitation methods, quantitate using both UV and MS data in a single calibration table, and use batch review software to evaluate and update results. Report results using preconfigured formats or customize using Report Builder.
- Use the optional NIST mass-spectral library search software to rapidly identify compounds by matching MS spectra with user-created library spectra.
- Use advanced, integrated networking capabilities to control the system and review results from any location.

MassHunter software adds analytical power

Agilent MassHunter Workstation software was designed to make your MS analyses faster, easier, and more productive. 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. In addition, MassHunter software enables data acquisition and instrument control for your Agilent TOF, Q-TOF, and triple-quadrupole instruments.



***Automatic translation into MassHunter Workstation software** lets you standardize all your LC/MS data processing and puts advanced data analysis and reporting capabilities at your command.*

Easier multi user sample submission

Optional LC/MS Easy Access software makes it easy for multiple users to submit samples for molecular weight confirmation and purification. Authorized users simply enter some basic sample information and a molecular formula or expected molecular weight and select from a menu of preconfigured methods. Easy Access software schedules the analysis, reports the sample status, and confirms the molecular weight or fractionates the sample.

Analytical Studio Reviewer speeds data review

Optional Analytical Studio Reviewer software complements the LC/MS Easy Access software by letting you quickly and easily review results. From any browser-equipped desktop, you can compare samples, confirm both UV and MS peak purity, troubleshoot syntheses, and design custom reports. The software includes simple generic settings for easy setup and is also fully customizable for more sophisticated users. Automated printing and email distribution make it easy to share data and analyze results.

Results are displayed for an entire well plate, with color coding showing results at a glance. Simply click on a sample well to display more detailed mass spectral information. You can edit and override summary results by regenerating a new file with modifications based on chemical knowledge—eliminating the need to re-run the sample.

Time-saving compliance features and products

Agilent's compliance features enable you to validate hardware, software, methods, and data at the lowest possible cost. We also offer a selection of optional products and services to make it easier to meet regulatory requirements.

Analytical Studio Reviewer *software simplifies data review, synthesis troubleshooting, and report generation.*

High-throughput compound screening and molecular weight confirmation

Agilent 6100 Series LC/MS systems give you the answers you need to make faster, more confident decisions about the next steps in your drug development process. Advanced capabilities such as fast MS scanning, multi-signal acquisition, ultra-fast ion polarity switching, and short injection-to-injection cycle times, help you avoid analysis bottlenecks. And with software tools for fast sample submission, molecular weight confirmation, and reporting, they make it simple and efficient to share results.

Compatible with ultra-fast chromatography for greater throughput

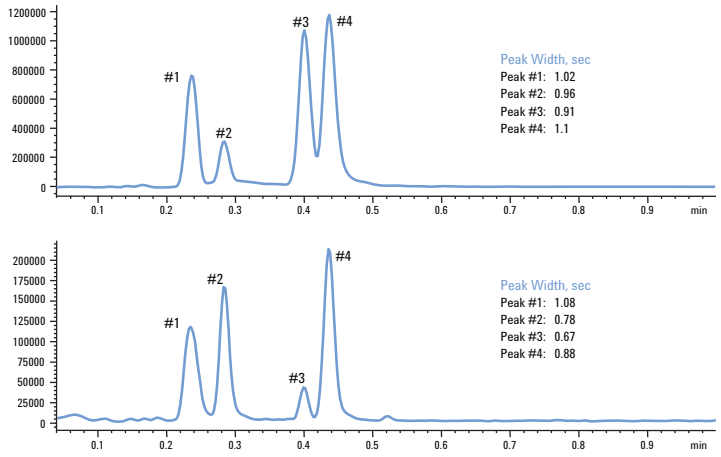
The ability to obtain high-quality MS data across chromatographic peaks as narrow as one second-wide enables maximum productivity, without compromising confidence in your results.

Reduced time between analyses

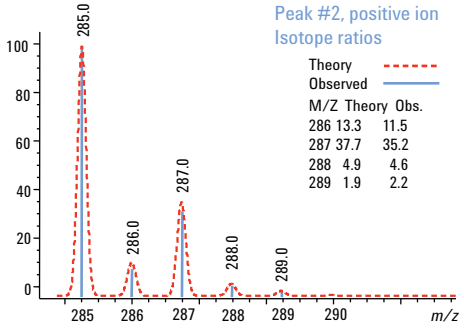
With fast electronics and short after-run recovery time, injection-to-injection cycle time is less than 10 seconds.

Full support for high-throughput samplers

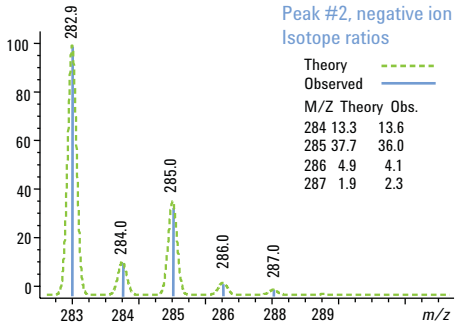
All Agilent 6100 systems are compatible with CTC autosamplers, giving you extra flexibility in your choice of sample vessels. More sizes and types of vessels can be used, allowing you to increase your sample capacity and laboratory throughput.



Multi-signal data acquisition *maximizes throughput for compound screening and molecular weight confirmation. Scanning at 10,000 u/s with 20 ms polarity switching, the 6150 system can acquire over 20 positive and over 20 negative mass spectra from sub-1-second LC peaks, while maintaining correct isotope ratios.*



Positive mode mass spectrum *showing accurate C_{13}, Cl_{35}, and Cl_{37} isotope ratios.*



Negative mode mass spectrum *showing accurate C_{13}, Cl_{35}, and Cl_{37} isotope ratios.*

High-throughput, high-confidence impurity detection

Agilent 6100 Series Single Quadrupole LC/MS Systems are excellent platforms for confirming the presence and quantity of impurities in foods and consumer products. Best-in-class sensitivity—plus productivity features such as ultra-fast ion polarity switching, fast scanning, powerful quantitation and reporting software, and the available multimode source—add certainty and speed to every step of your most demanding impurity analysis.

Multi-signal capability provides more information

Multi-signal capability gives you more information about your sample—including any impurities present—in a single run. Using ultra-fast ion polarity switching, you can rapidly screen for impurities without having to determine the optimum ionization polarity in advance.

You can also change the CID energy to increase spectral information, using low-energy CID to maximize the molecular ion and high-energy CID to generate more fragments. CID spectra can be saved and matched against spectra in user-created libraries.

Multimode source increases productivity

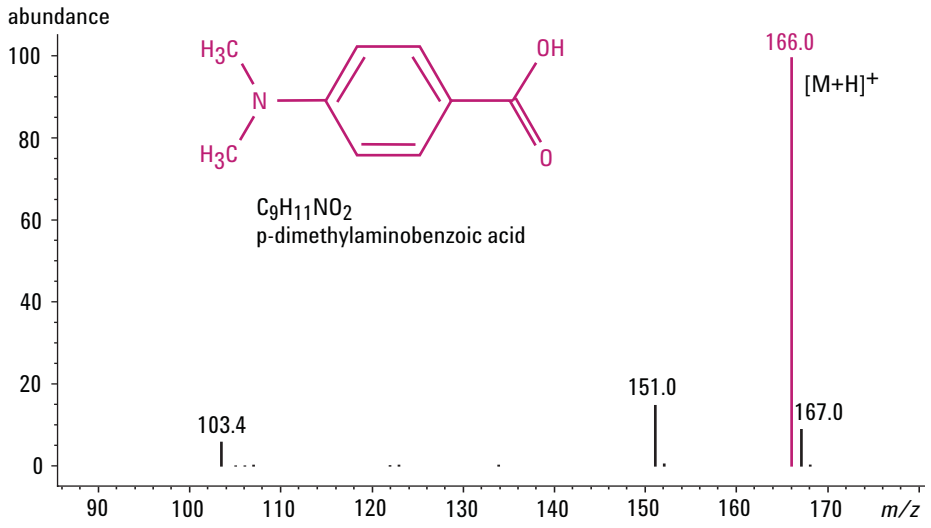
Agilent's multimode source helps you to identify a broad range of compounds, regardless of the technique to which they best respond—all in a single analysis.

Ultra-fast scanning increases impurity detection

The 6150 system offers ultra-fast scanning up to 10,000 u/sec, making it the ideal choice for UHPLC applications. By acquiring more data points across narrow peaks, you can be sure you're not missing anything.

Fast, easy quantitation of impurities

Quantitation is easy to set up, and ChemStation's Peak Purity software can be used to assist in the selection of quantitation ions, using automatic calculations and common quantitation methods. All quantitation instructions can be saved as methods for unattended analyses and reporting.



Fast scanning improves impurity detection with fast chromatography. *Analysis of octyl-dimethyl-p-aminobenzoic acid (OD-PABA) on an Agilent 1200 Rapid Resolution LC and Agilent 6150 Single Quadrupole LC/MS found many possible impurities and degradants using 5400 u/s scanning. However, the compound p-dimethylbenzoic acid, a known degradant of OD-PABA, was only seen clearly at a scan speed of 10,000 u/s.*

Turnkey solution for high-throughput, high-yield purification

Agilent can provide a complete purification system optimized to deliver the purest fractions based on Agilent's 1200 Series preparative LC system, diode-array detector (DAD), and 6100 Series LC/MS. The turnkey system also includes a delay sensor and intelligent, mass-based fraction collection software.

Better timing improves fraction purity

The fraction collection software and delay sensor accurately assess the delay time between the DAD and LC/MS to ensure precise triggering of fraction collection. There is no loss of valuable fractions and minimal collection of unwanted material.

Review and optimize purification conditions

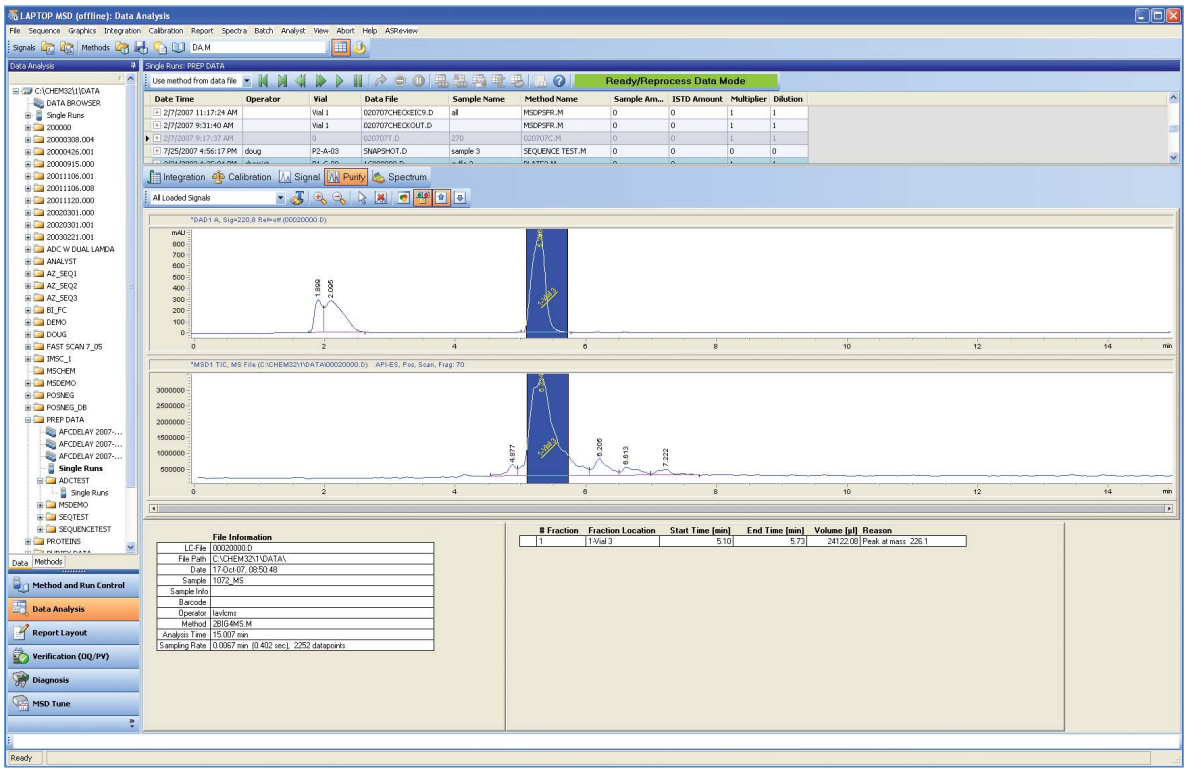
The complete Agilent purification system includes fraction review, which can be used to review a run to find the best LC/MS operating conditions and the best masses to trigger fraction collection.

Integrated safety features free you to perform other tasks

Agilent's purification system automatically detects and manages solvent leaks. With this added safety feature, the system can operate completely unattended.

Real-time data processing yields purer fractions

Because data processing occurs in real time at the MS, fraction collection decisions are made immediately, with no delays in sending data to a separate computer for action.



Fraction Review in data analysis *allows the user to examine fraction collection results. Note that the blue bars above show the fraction collected.*

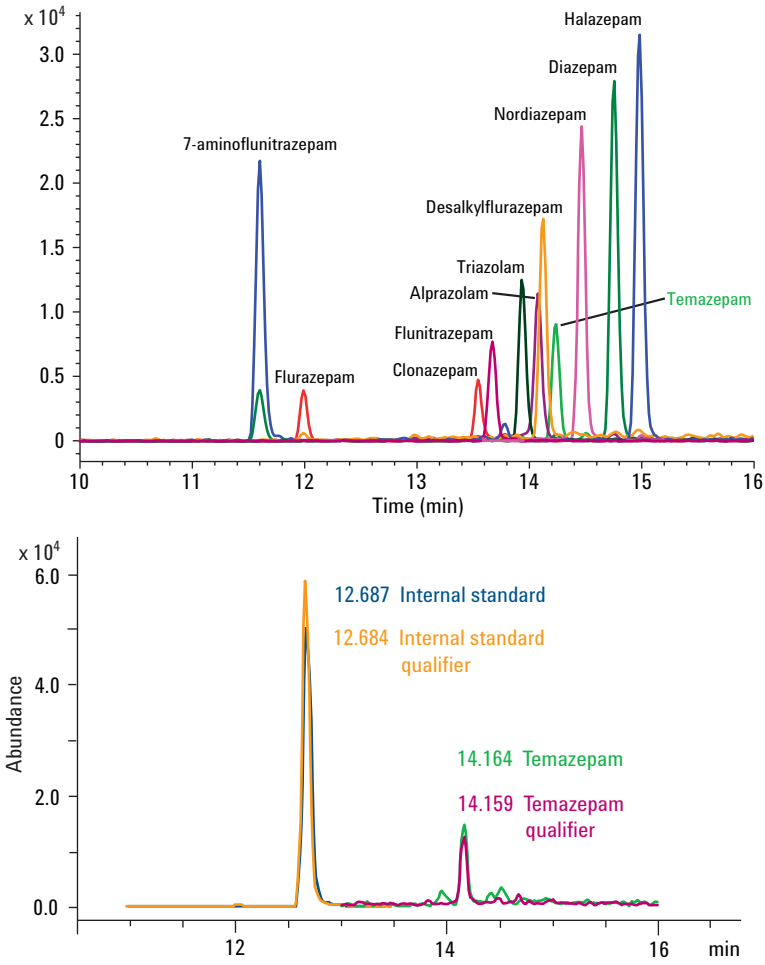
High-throughput target compound analysis

Agilent 6130 and 6150 systems give you the ability to confidently confirm the presence and quantity of low-level target compounds, even in complex mixtures. Outstanding sensitivity, as well as the wide choice of ion sources, multi-signal capability, and easy-to-use software for quantitation and reporting assure success with even the most demanding forensics, drugs-of-abuse, and environmental analyses.

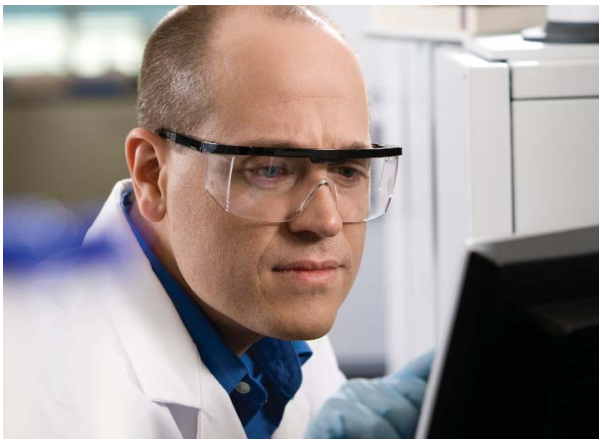
Quantitate, identify, and confirm—all in a single analysis

In many cases, Agilent's superior sensitivity allows you to perform target compound analyses in scan rather than SIM mode. This allows you to identify target and non-target compounds at the same time.

Within a single injection you can obtain both positive and negative spectra, vary CID energy to obtain more structural information, and collect scan and SIM data. With ultra-fast ion polarity switching, you can rapidly screen for unknowns without having to determine the optimum ionization mode in advance. For compounds that ionize well in both modes, you get both positive and negative spectra, increasing the confidence in your results.



Analysis of benzodiazepines in scan mode. *Extracted ion chromatograms can be used to quantitate target analytes. Confirming ions increases confidence in results.*



Add the richness of mass spectral information to your data set

If your lab is ready to step up to unprecedented sensitivity, selectivity, and high-quality spectral information, it's time to look at Agilent's 6100 Series Single Quadrupole LC/MS solutions. Whether you're doing routine testing or discovery research, we can help you select an affordable, easy-to-own system that meets your analytical needs today and can grow with you into the future.

Use Agilent HPLC Columns for consistent, reproducible results

Agilent controls every step of its ZORBAX and Poroshell HPLC column manufacturing, including testing the silica seven times for your quality assurance. Because we manufacture the silica, we are able to ensure our columns are available in the varying phases and configurations you need for flexible method transfer from lab to lab and around the world. And, we invest in continuous R&D to provide breakthroughs in column technology, like ZORBAX Rapid Resolution High Definition (RRHD) Columns and Poroshell 120.

Agilent ZORBAX RRHD columns deliver the resolution and peak definition required for critical LC/MS analyses, as well as robust, reliable performance over the extended operating range of the 1290 Infinity LC System. Agilent Poroshell 120 columns are made with a unique silica manufacturing and single-step bonding process that gives you speed and resolution like a sub-2 µm column with up to 50% less back pressure, so it works on any HPLC.

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