

Agilent 6410 Triple Quadrupole LC/MS  
**Sensitivity, Reliability, Value**



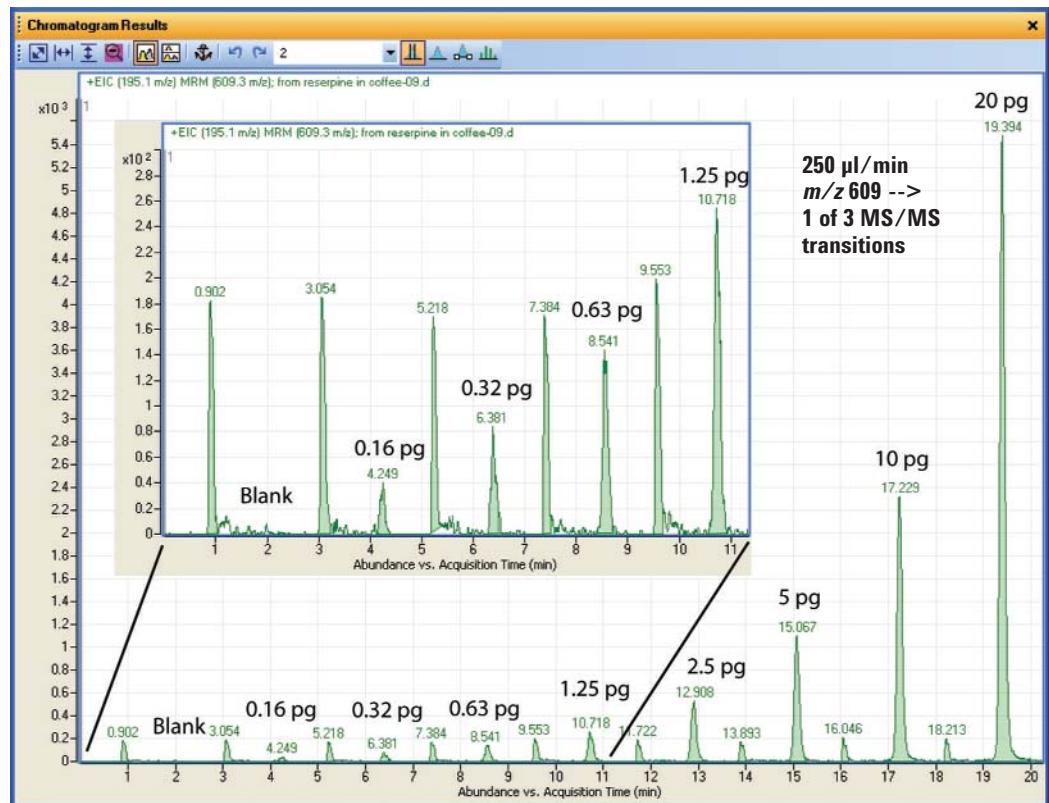
## Sensitivity, Reliability, Value

Whether you quantitate drug metabolites, measure herbicide levels in food, or determine contaminant levels in ground water, the triple quadrupole mass spectrometer is unequalled for quantitating trace organic compounds in complex matrices. The Agilent 6410 Triple Quadrupole LC/MS establishes a new standard for value in a triple quadrupole mass spectrometer. It delivers outstanding sensitivity, great ease of use, and legendary Agilent reliability—all at a very attractive price.

### Performance and reliability for demanding quantitative analyses

The 6410 Triple Quad is built upon Agilent's proven expertise in quadrupole mass spectrometry. Paired with Agilent's industry-leading 1200 Series LCs and ZORBAX LC columns, the 6410 delivers sensitive, reproducible analyses of target compounds in complex matrices.

- **Femtogram-level sensitivity** – Maximized ion generation and transmission across a broad mass range ensure low limits of detection and quantitation—regardless of application.
- **Fast, high-throughput MS/MS** – An innovative collision cell maintains sensitivity and avoids memory effects even at very short dwell times.
- **Rugged, reliable performance** – Orthogonal nebulization and high drying capacity simplify operation, allow split-less operation at common flow rates, keep the ion optics cleaner, and reduce background.
- **Tremendous versatility** – A broad selection of ion sources allows the 6410 to address the widest range of applications.
- **Simplified operation** – Automated tuning, parameter-less integration, method editor, curve-fit assistant, batch review, outlier flagging, and customizable reporting maximize convenience and throughput for the quantitation of large, multi-compound batches.



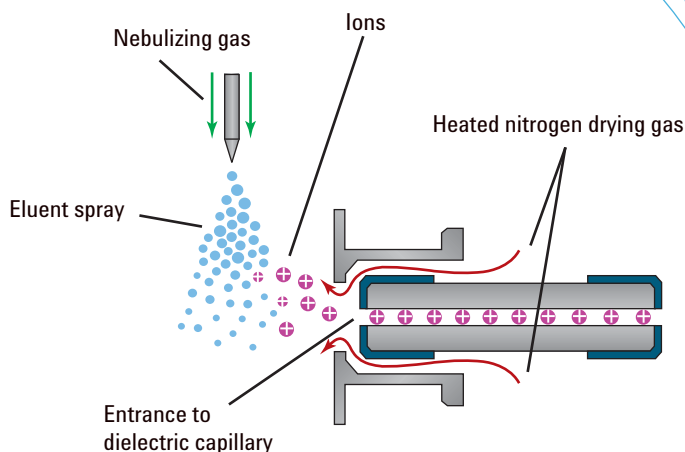
Analysis of a reserpine dilution series in coffee shows femtogram-level sensitivity even in a complex matrix

**Low limits of quantitation regardless of application**

The Agilent 6410 Triple Quadrupole LC/MS has been designed to maximize ion generation and ion transmission across a broad mass range, for low limits of detection and quantitation regardless of application.

**Great sensitivity starts with superior ionization technology**

Agilent's LC/MS ion sources use our patented nebulization technology. Superior nebulization, orthogonal to the axis of the sampling capillary, reduces noise related to incomplete drying of solvent droplets. It also keeps the sampling capillary and ion optics cleaner, for reduced maintenance. The standard sources allow split-less operation at all common flow rates.

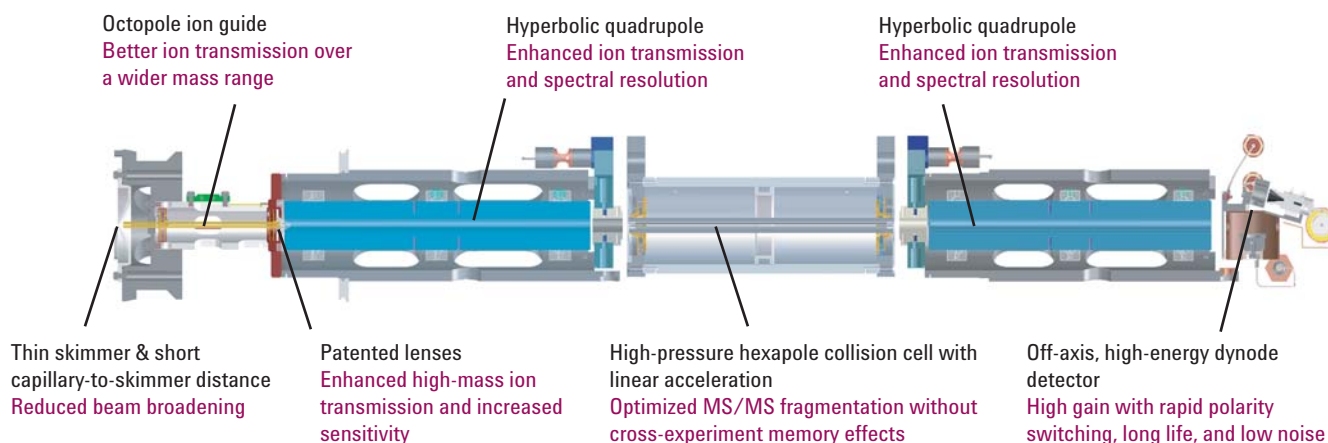


**Orthogonal nebulization and high drying capacity reduce droplet noise for better sensitivity, and also reduce maintenance requirements**

**Collision cell innovations enhance sensitivity and speed**

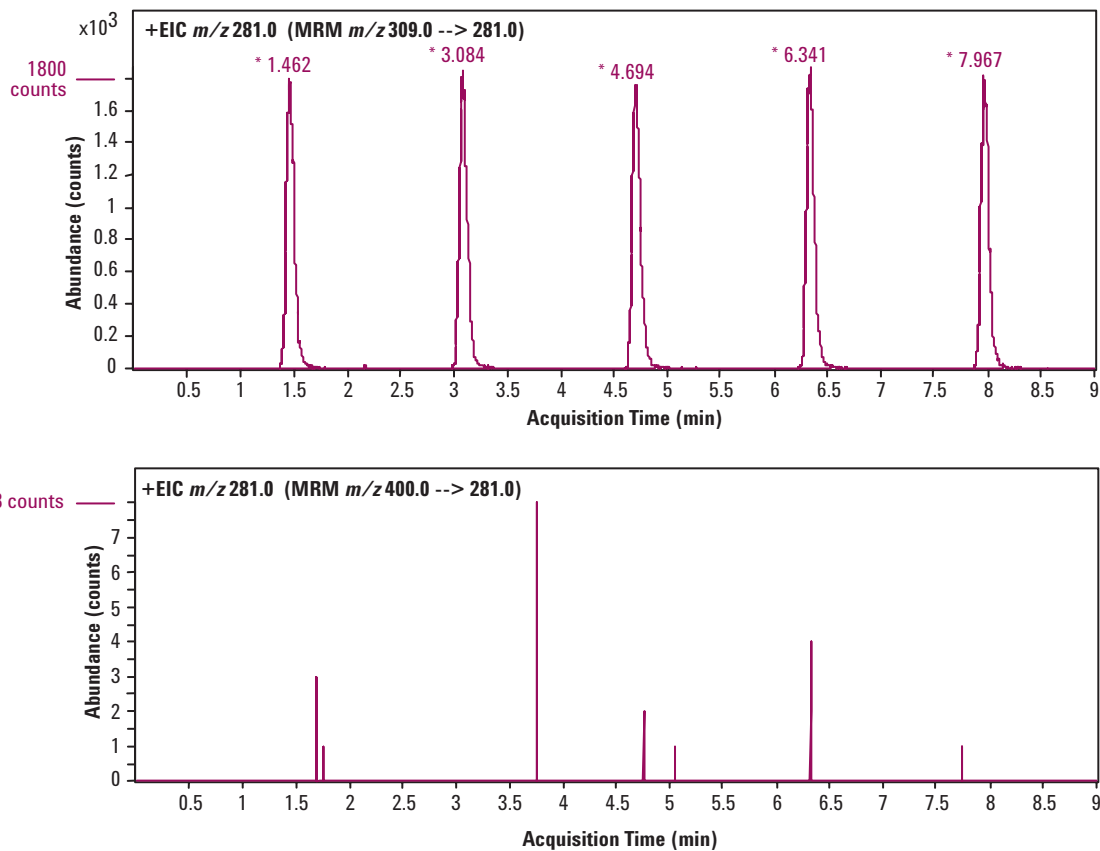
The 6410 Triple Quad features a high-pressure, high-frequency hexapole collision cell that delivers rich MS/MS spectra with both sensitivity and speed. The collision cell uses linear axial acceleration to achieve very fast MS/MS,

without cross-experiment memory effects (see page 4). It maintains excellent sensitivity even with five-millisecond dwell times (see page 4), so you can perform measurements over even the narrowest chromatographic peaks.



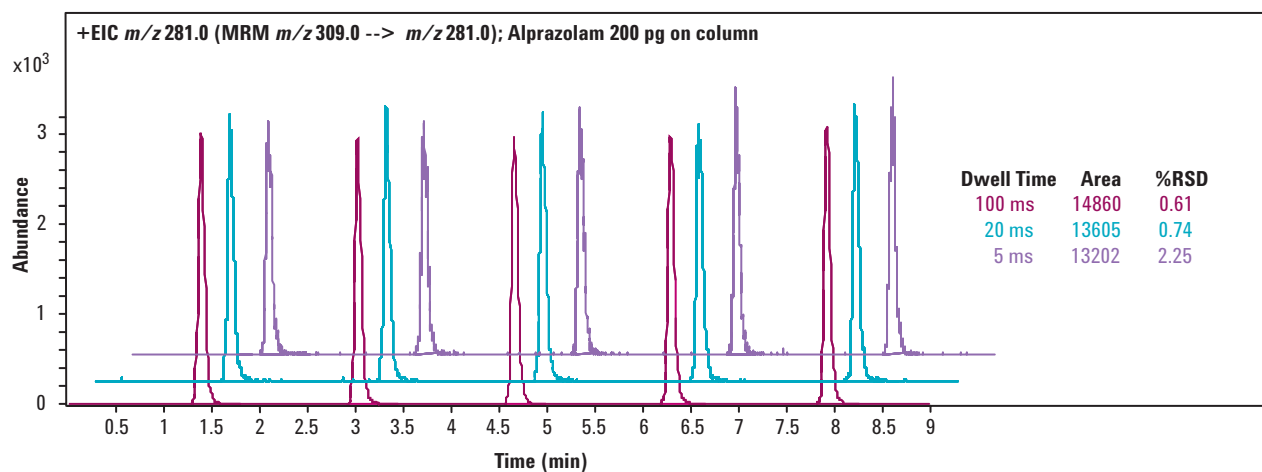
**Ion optics are optimized for ion transmission across a broad mass range**

### No cross-experiment memory effects



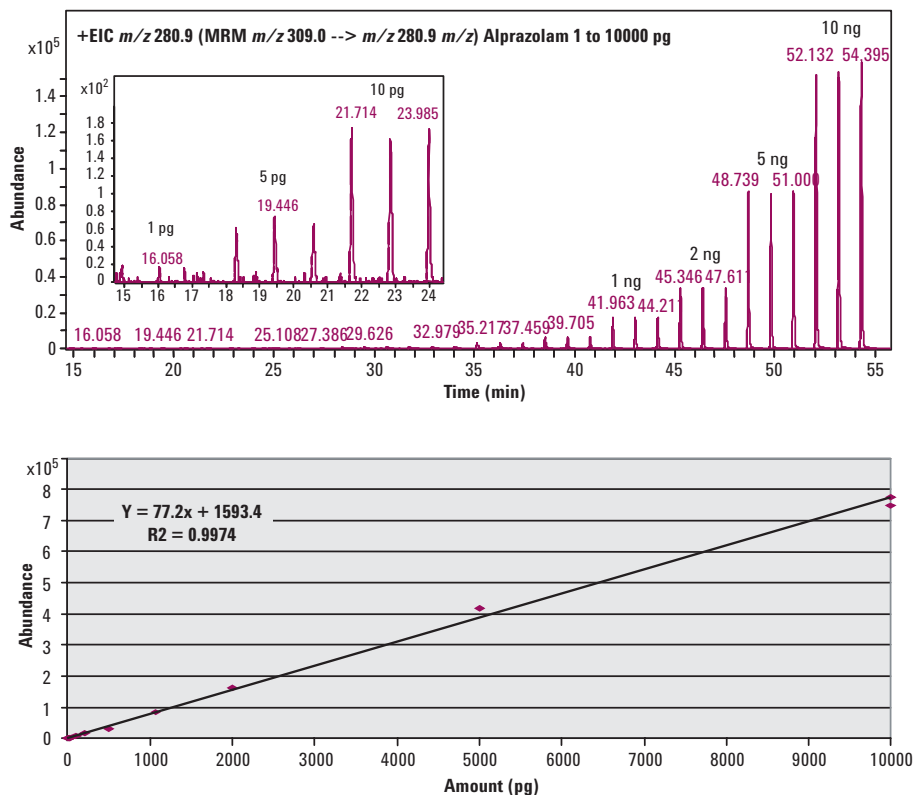
MS/MS analysis of 500 pg of alprazolam at 20 ms dwell time shows excellent RSD and no detectable cross-experiment memory effects (cross talk). Note that the top scale is 225 times the bottom scale.

### Excellent %RSD even at short dwell times



Analysis of 200 pg of alprazolam on column shows only minor changes in peak area and percent RSD even at very short MS/MS dwell times. This makes the 6410 ideal for fast chromatography and high throughput.

### Excellent linearity over a wide dynamic range



This alprazolam analysis in positive electrospray mode demonstrates excellent linearity over a wide dynamic range

### Versatility of multiple ionization choices

For maximum flexibility in matching your 6410 to your applications, Agilent offers a wide selection of ionization sources:

- Electrospray ionization (ESI)
- Atmospheric pressure chemical ionization (APCI)
- Atmospheric pressure photoionization (APPI)
- Multimode (ESI/APCI)
- HPLC-Chip Cube MS interface

The multimode source is a breakthrough offering nearly universal ionization for LC/MS users who want greater versatility, throughput, and convenience.

It can operate in, and automatically switch between, a variety of modes:

- ESI only
- APCI only
- Alternating ESI/APCI mode
- True simultaneous ESI and APCI

with results as good as or better than dedicated, single-mode sources. The multimode source facilitates access for multiple users and long, unattended runs involving more than one ionization mode.



Agilent multimode (ESI/APCI) source simplifies access and maximizes throughput while delivering superior performance

## All new, sample- and compound-centric software

The all-new Agilent MassHunter Workstation software makes your analyses easier. It includes separate programs for instrument control and data acquisition, qualitative data analysis, and quantitative data analysis. Each program is designed to simplify operation and maximize productivity.

### Faster, easier setup and acquisition

Whether you are an expert or new to LC/MS, MassHunter Workstation software greatly simplifies operation of your LC/MS system.

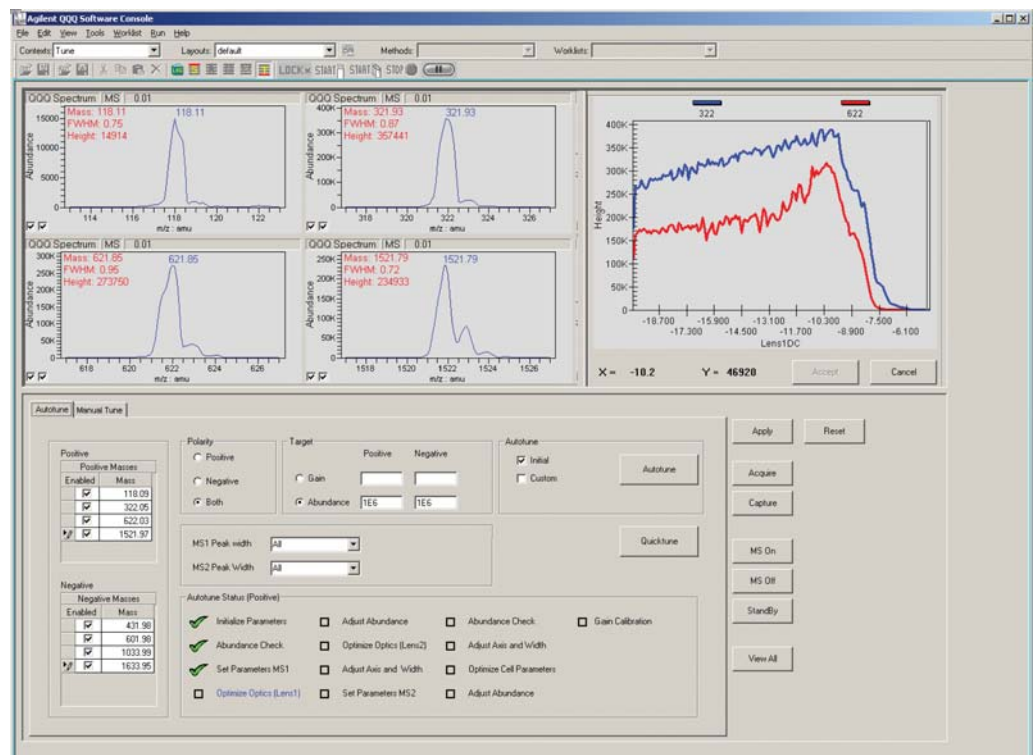
- **Tune automatically** – A proven, reliable autotune program maximizes performance and minimizes effort.
- **Save time setting up analyses** – Import worklists directly from spreadsheet programs such as Microsoft® Excel.
- **Operate from a single user interface** – A single interface for both LC and MS can be configured to display only the information you need.

### Better, easier quantitation

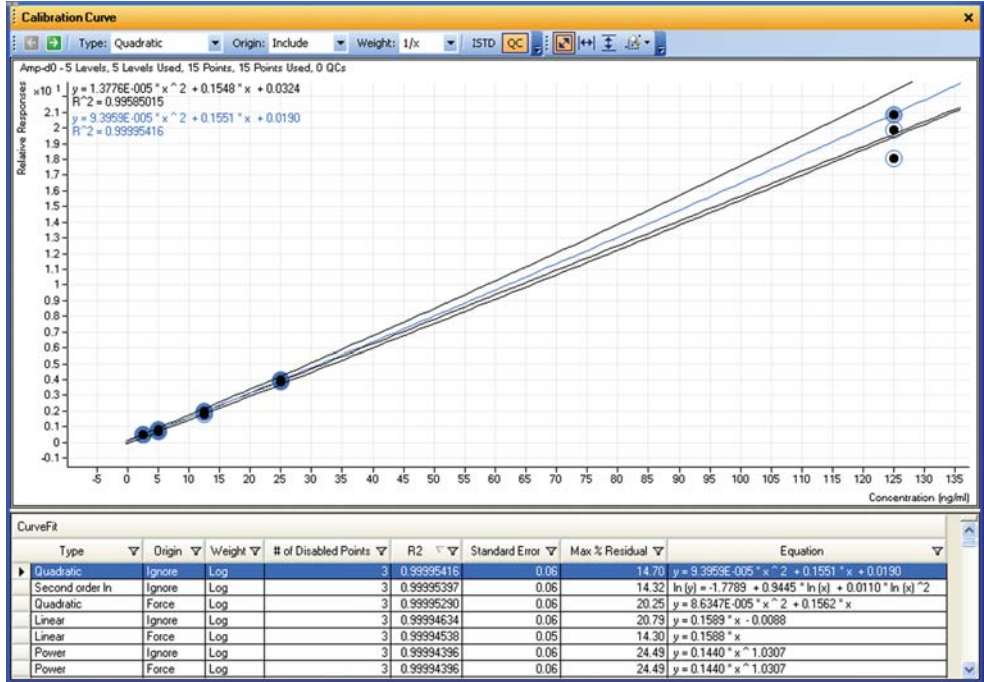
All-new, sample- and compound-centric quantitation software ensures that you spend less time analyzing your data.

- **Set up quantitation more easily** – Import information directly from the data acquisition method.
- **Find the best curve fit faster** – A curve-fit assistant tests all fits and provides statistics on their quality.
- **Better integration** – Automated, parameter-less integrator uses a novel algorithm, optimized for MRM data from a triple quad, to achieve superior integration with minimum user input.

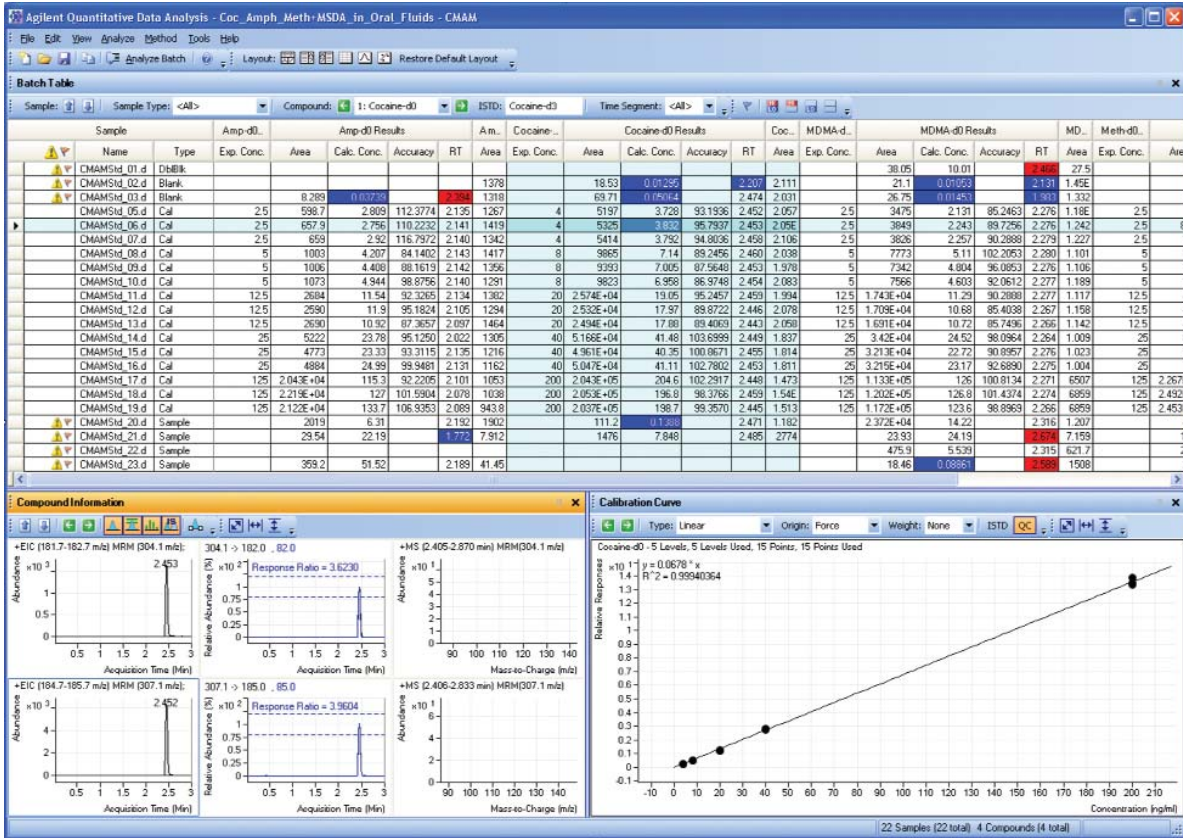
- **Dynamically linked results save time** – Calibration curves are automatically updated when you reintegrate a peak.
- **Review an entire batch at once** – The batch-at-a-glance interface helps you review more samples more easily.
- **Outlier values are automatically flagged** – Color coding focuses your attention where it is needed.



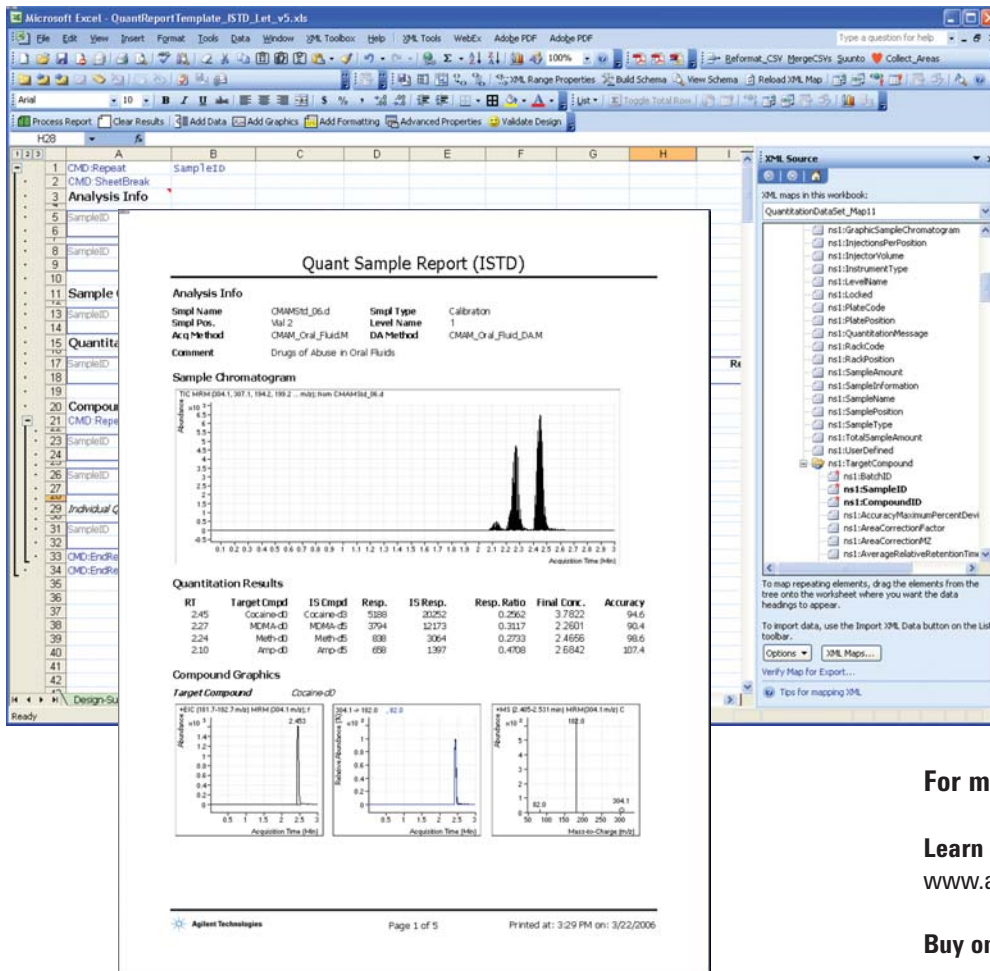
MassHunter Workstation software for the 6410 includes a range of calibration options, from manual tuning to the fully automated autotune program shown here that ensures maximum performance with minimum effort



The curve-fit assistant automatically tests all possible fits and provides statistics on their quality, making it easy for you to select the best fit



The "batch-at-a-glance" interface allows you to navigate the results on a compound- or sample-centric basis. Dynamic linking of compound results and color coding of outliers help you focus on problem data and significantly speed up results review. Shown here is quantitation of four drugs of abuse with ISTDs in oral fluid.



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The MassHunter Workstation software includes a wide array of standard report templates, and allows you to easily customize them in the well-known Microsoft® Excel environment. You can also use Excel to preview printed reports.

### Flexible reporting

With the MassHunter Workstation software, reporting is fast and flexible. Preconfigured templates simplify basic reports, or you can create custom reports in the familiar Microsoft® Excel user interface. Processed results and

system parameters are stored in XML, a standard data interchange format, so they can easily be imported into proprietary databases or informatics systems.

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