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WATERS QUANTITATIVE ANALYSIS SOLUTIONS

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WATERS QUANTITATIVE ANALYSIS SOLUTIONS

MORE SENSITIVITY. MORE SPEED. WHAT MORE CAN YOU ASK FOR IN A COMPLETE QUANTITATIVE ANALYSIS SOLUTION?
**THE CHALLENGE OF QUANTITATIVE ANALYSIS**

Tandem mass spectrometry, or MS/MS, is quickly becoming the acknowledged industry standard for quantitative analysis. From routine screening to trace monitoring, analysts are now relying on tandem MS for accurate, precise analysis and high throughput. Despite the advantages offered by HPLC/MS/MS, many significant challenges still remain—including throughput, method development and ion suppression due to analyte co-elution, which limits method sensitivity. Getting around these limitations often requires lengthy method optimization and time-consuming sample preparation.

**WATERS COMPLETE SYSTEM SOLUTION**

The Waters solution revolutionizes quantitative LC/MS/MS analysis, delivering unrivaled sensitivity and speed. We combine uniquely designed, complementary analytical and informatics technologies for a truly integrated system, including our groundbreaking ACQUITY Ultra Performance LC™ (UPLC™) system, Tandem Quadrupole MS technologies, chemistries and software. The result is an unparalleled suite of compliant system solutions for high-throughput UPLC/MS/MS and GC/MS/MS applications. Expect superior sensitivity, specificity and productivity—and maximize efficiency for a variety of applications, from pharmaceutical drug discovery, environmental and clinical analyses, to general quantification tasks.

**WATERS: FOR COMPLETE CONFIDENCE**

Waters Corporation is the world’s leading provider of instruments, chemistries, software, and support services for chromatography, mass spectrometry, thermal analysis and laboratory informatics. For more than 45 years, Waters has been supplying scientists with the analytical tools that allow them to better understand the secret of chemistry and of life itself. Around the globe, Waters systems and solutions are used by pharmaceutical, life science, proteomics, food and beverage, environmental, defense, industrial, and biotechnology researchers to push the boundaries of analytical science.

To learn more visit www.waters.com
OPTIMIZE YOUR QUANTITATIVE DATA ANALYSIS
Enhancing the capabilities of Waters Tandem MS systems, Masslynx™ Software has a range of optional Application Managers, optimized for your data analysis and processing requirements. Waters eliminates the need for complex, time-consuming manual data review, increasing your productivity. AutoTune and auto-MRM Developer are standard in all Waters Tandem Quadrupole MS technologies. Additionally, for automated system setup, the ACQUITY TQD System features IntelliStart software.

QuanLynx™ Application Manager
• Comes as standard with Masslynx Software
• Batch quantification featuring ApexTrack™, a novel peak detection algorithm
• Rapid review of results in an easy-to-use browser format
• Comprehensive 21 CFR Part 11 compliance tools

TargetLynx™ Application Manager
• Includes all features of OpenLynx in addition to automated QC check for flagging out-of-range data, allowing samples that fall outside user-specified or regulatory thresholds to be easily identified
• Confirmation of information necessary for EPA compliance

QuanOptimize™ Application Manager
• Automated method development (cone voltage, collision energy, MRM transition selection)
• Best method identification (ESI, APCI, positive or negative mode) for each compound
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OpenLynx™ Open Access Quantification
• Non-expert access to LC/MS quantification
• Multi-user unsupervised sample login with full automation of all stages in LC/MS quantification

ULTRA PERFORMANCE LC: A REVOLUTION IN SEPARATION SCIENCE
At a time when scientists have reached performance and throughput barriers and are pushing the limits of conventional HPLC, Ultra Performance LC (UPLC) presents a solution. As a breakthrough category of analytical separation, UPLC technology maintains the practicality and principles of HPLC, but significantly increases resolution, sensitivity and speed. The Waters ACQUITY UPLC System incorporates innovative column chemistries, robust hardware and easy-to-use software. This unique configuration optimizes the potential of high-pressure sub-2 micron technology with its extraordinarily low carryover sample manager, low system volumes and high-speed, high-sensitivity detectors. ACQUITY UPLC flow rates are optimized for Waters MS API interfaces, eliminating the need for flow splitting and making it the ideal inlet for the Quattro family of mass spectrometers.

Because of the ACQUITY UPLC System’s unique design characteristics, the full chromatographic advantages of small particles and high flow rates can finally be exploited. This yields up to a 10x increase in throughput and a 5x increase in sensitivity. The increased resolution and speed also simplifies the method development process. The ACQUITY UPLC’s added efficiency results in sharper peaks, which reduces ion suppression caused by co-elution. Overall, ACQUITY UPLC’s optimized chromatographic performance produces better quantitative analyses in less time—for truly higher productivity.

Whether your objective is maximum speed (with the same resolution) or maximum resolution (in less time), UPLC allows you to achieve both—in addition to increased sensitivity—without compromising chromatographic integrity.
UNPARALLELED PERFORMANCE, QUALITY AND THROUGHPUT

Complemented by ACQUITY UPLC’s superior speed and sensitivity, Waters family of tandem quadrupole mass spectrometers brings unprecedented gains in performance, quality and throughput. The Quattro micro™ API is a robust, entry-level mass spectrometer for routine quantitative LC/MS/MS. For the ultimate performance, Waters T-Wave™ enabled systems deliver rapid MS/MS for maximum UPLC compatibility. The Waters TQ Detector is the next generation tandem MS, designed for chromatographers needing rapid, easy-to-use UPLC/MS/MS, and featuring IntelliStart™ software for automated system setup. For the ultimate combination of speed and sensitivity, the Quattro Premier™ XE delivers best-in-class performance when integrated with the ACQUITY UPLC.

With unmatched flexibility and functionality, Waters UPLC/MS/MS systems provide superior performance for highly selective quantitative analysis, compound identification and structural characterization.

And for environmental, food and beverage, clinical, and pharmaceutical applications, Waters has specifically developed the Quattro micro GC Mass Spectrometer to deliver optimized EI/CI analysis. Whether you need UPLC/MS/MS or GC/MS/MS, Waters has everything you need to achieve your goals.

1 The traveling wave device described here is similar to that described by Kirchner in US patent 5,206,506 (1993).

VERSATILITY AT YOUR FINGERTIPS

For the highest confidence in your analytical UPLC/MS/MS data, you need the right tools for the job. Waters provides an array of easily configurable ionization and source capabilities designed to maximize instrument uptime and provide versatility for rapid analysis of a wide range of compound classes:

ZSpray™ Dual Orthogonal Source
• The most robust API ion source available for MS
• Provides maximum uptime even with “dirty” samples for maximum productivity
• Ideal for biological samples
• Easy tuning of probe types

ESCi® Multi-Mode Ionization Source
• Alternating ESI and APCI from single probe
• Ideal for screening applications
• Increased ionization coverage for a wider range of compounds

T-Wave™ Ion Optics for the Quattro Premier XE and TQ Detector
• Maintains signal intensities and minimizes inter-channel crosstalk, even at the high MRM acquisition rates required for correct quantification of narrow UPLC peaks
• Delivers enhanced sensitivity and resolution for fast scanning modes such as precursor ion and neutral loss analysis
• Enables simultaneous quantification and confirmation of large numbers of compounds in the shortest of analytical time frames

Utilizing the rapid analysis and multi-mode ionization capabilities of the ACQUITY UPLC Quattro Premier XE system for the quantitative analysis of common drug substances. MRM data were acquired in a single run in under one minute for all modes.
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APPLICATION MANAGERS

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