

Introducing The Xevo TQ MS

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Xevo TQ MS

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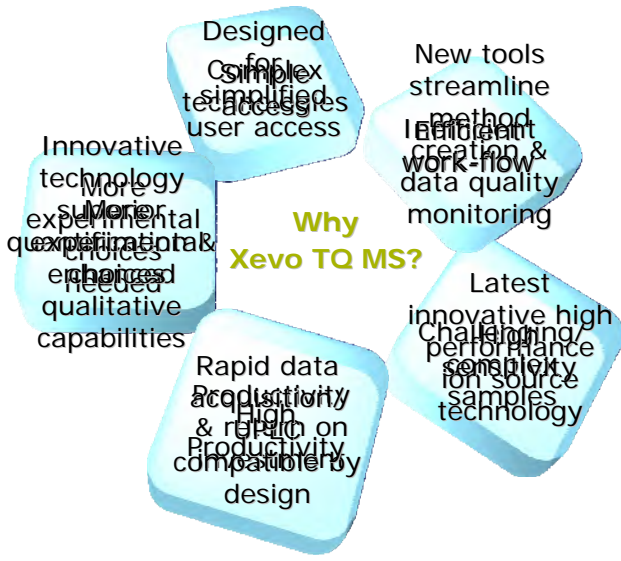
- A tandem quadrupole mass spectrometer
- For high performance LC/MS/MS applications
- But its **not a conventional** tandem quadrupole mass spectrometer!

Outstanding **quantitative LC/MS/MS** performance
&
Enhanced **qualitative LC/MS/MS** capabilities

Common Challenges Facing Laboratories



Why Xevo TQ MS?



The Accelerated Evolution Of MS Technology

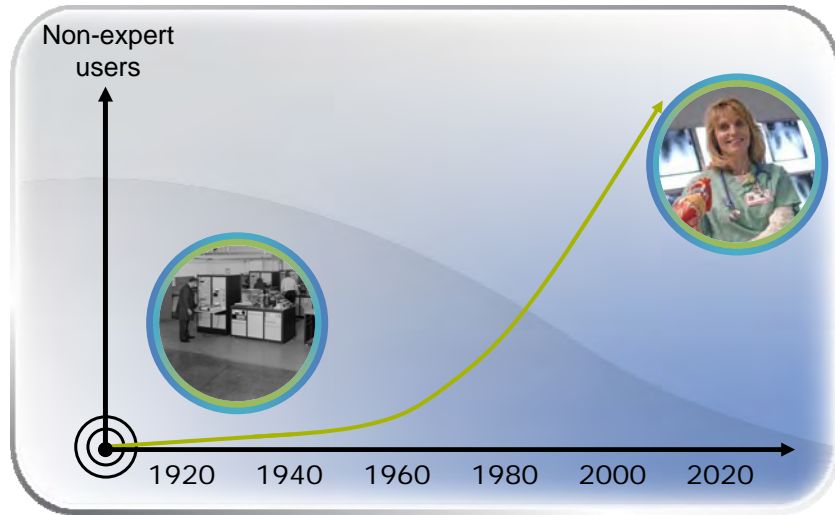


Xevo TQ MS



Simple Access

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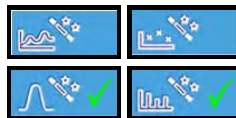


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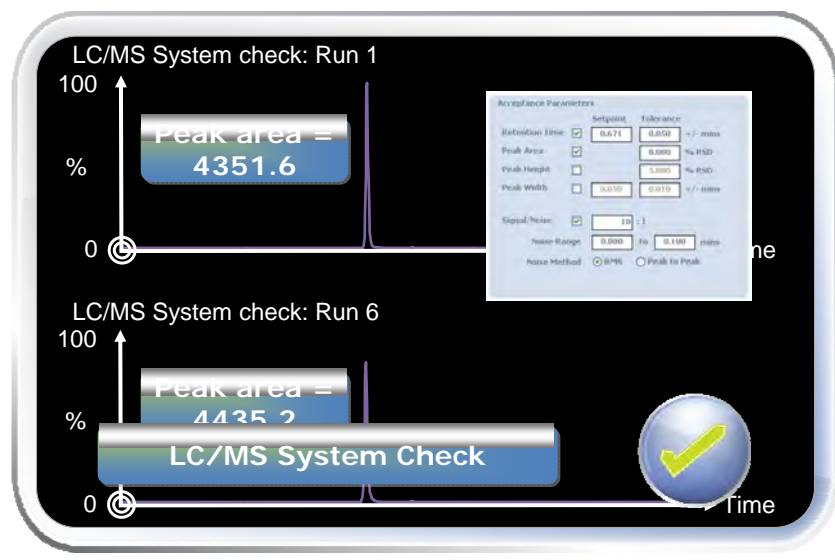
IntelliStart



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IntelliStart

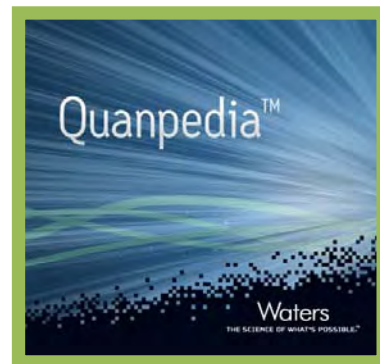
- On-board fluidics
- Advanced LC/MS/MS
 - More Accessible
 - More Reliable
 - More Productive





Efficient Work-Flow

- A central data base for quantitative LC/MS methods
- Based on compound name
- A tool to aid MS method creation
 - Automatically creates data **acquisition methods**
 - Automatically creates data **processing methods**



Quanpedia™



Use Predefined Analysis
Use Predefined Compounds

- Chromatography Method
- Mass Spectrometer Method
- Quantitation Method
- Sample List

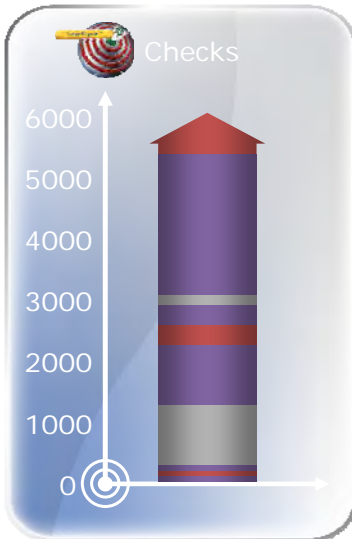


- Pro-active quantification data monitoring
 - Blanks
 - Quality Control Standards
 - Internal standards
- Action on failure:
 - Re-inject
 - Terminate sample run



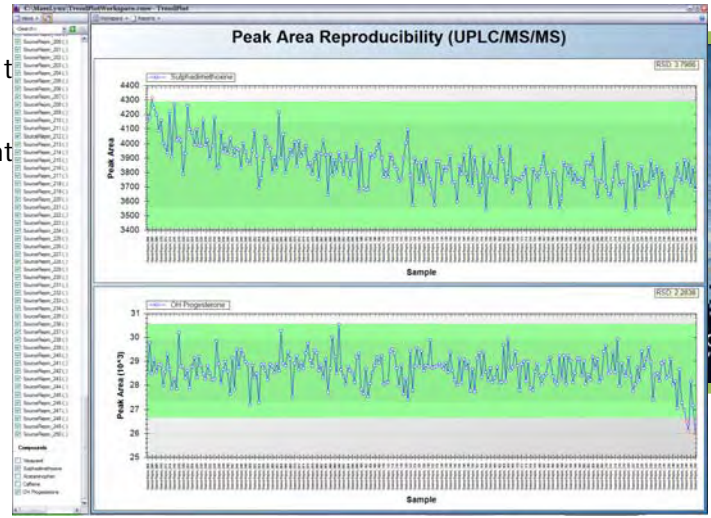
Prevents precious samples from being injected if the LC/MS system is not performing appropriately.

Efficient Work-Flow



Efficient Work-Flow

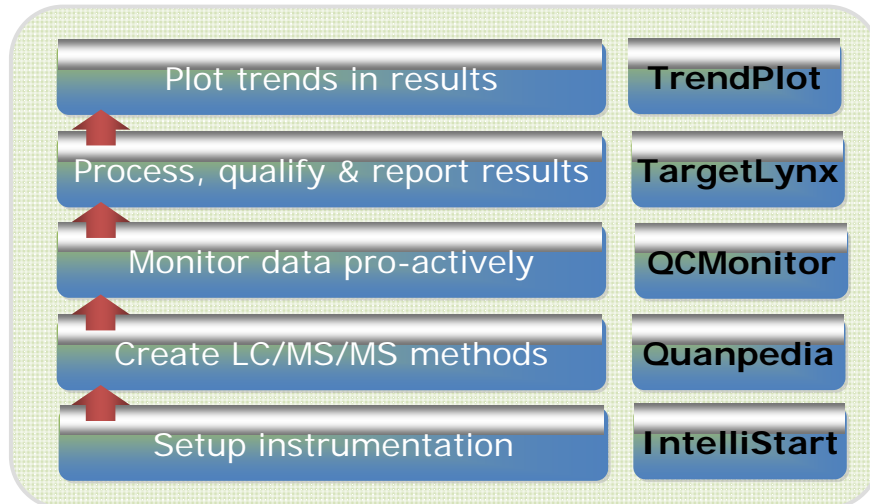
- At
- Int



Monitor long term data trends/system performance

Efficient Work-Flow

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High Sensitivity

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- Zspray™
 - Robust performance in the face of complex biological samples
 - Zspray, a proven geometry (many years experience & 1000's in use daily).
- Designed to be compatible with all your HPLC and UPLC needs
- Innovative, Ergonomic Engineering
 - Performance, usability & serviceability
 - Tool free maintenance
 - Novel tool free source exchange
 - Integrated gases
 - Plug and play probes



**New High Performance
AP Ion Source**

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High Sensitivity

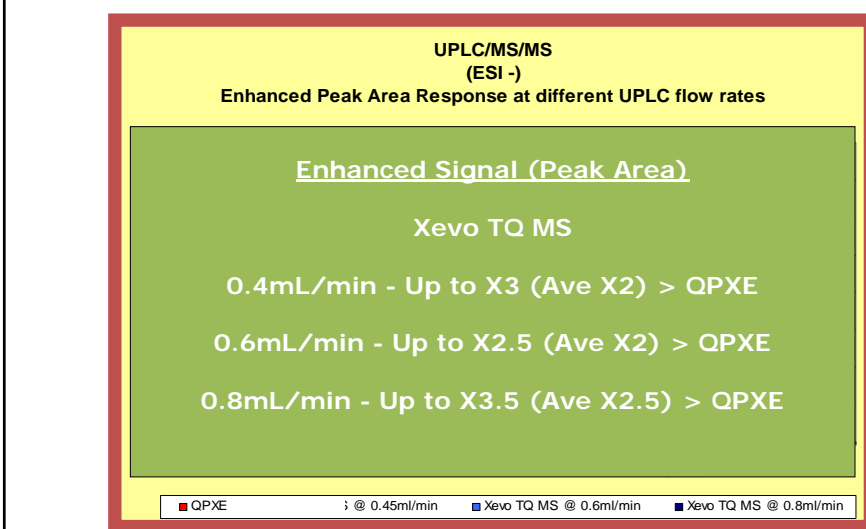
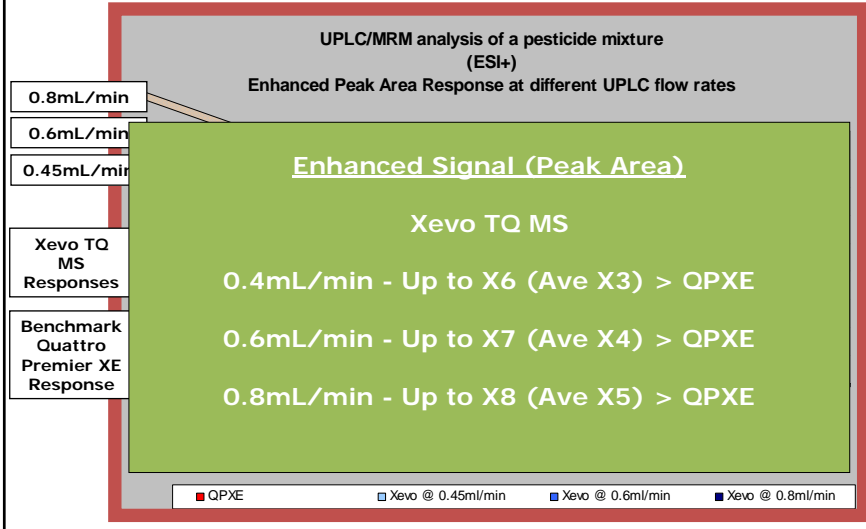
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- Optimized gas flow dynamics
- High temperature desolvation (650C)
- Thermally regulated ionisation chamber
- Highly efficient ionisation
 - High LC flow rates
 - High aqueous solvents



**Designed for Performance,
Usability & Serviceability**

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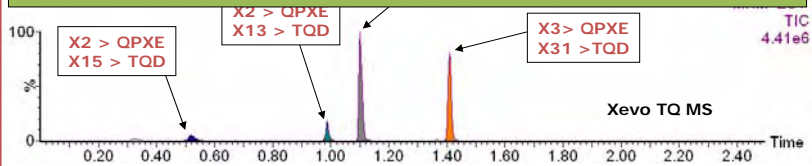


Enhanced SIGNAL (Peak Area)

Xevo TQ MS

Up to X4 (Ave X3) > QPXE

Up to X30 (Ave X20) > TOD

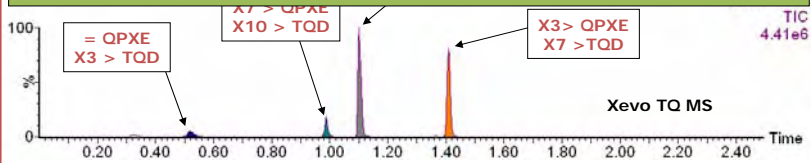


Enhanced SIGNAL/NOISE

Xevo TQ MS

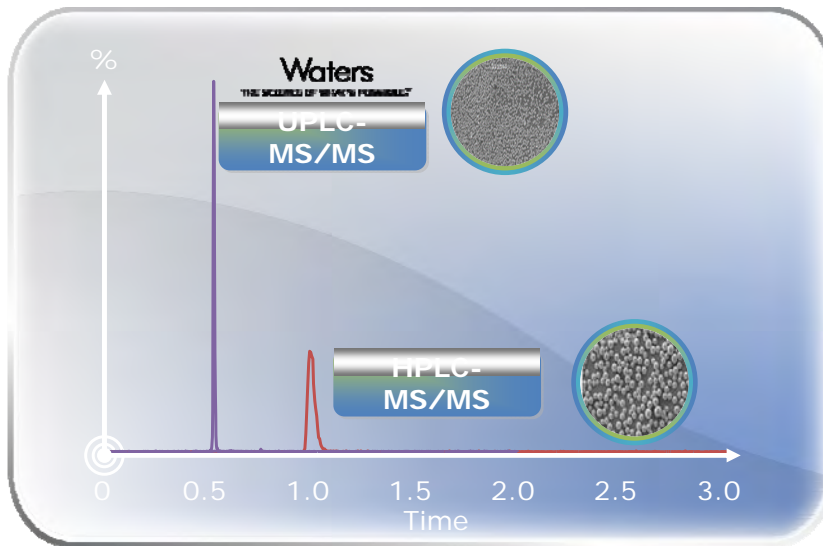
Up to X7 (Ave X3) > QPXE

Up to X16 (Ave X9) > TOD





High Productivity



High Productivity

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- Fully compatible with ACQUITY UPLC by design
- High speed data acquisition
 - T-Wave™ enabled collision cell*
 - Rapid polarity switching (20ms)
- A winning combination that provides:
 - The lowest limits of detection
 - The very best chromatographic resolution
 - Unmatched speed of analysis
 - Highest productivity



The ACQUITY UPLC - Xevo TQ MS LC/MS/MS System

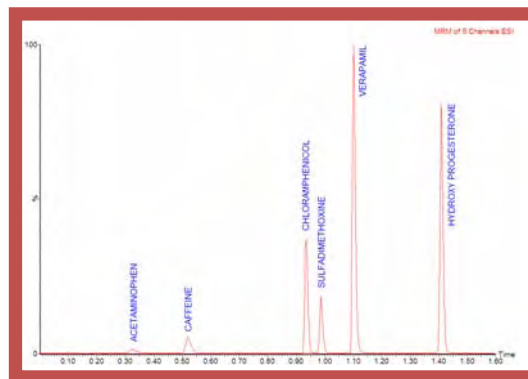
* The traveling wave described here is similar to that described by Kirchner in US Patent 5,206,506 (1993).

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High Productivity

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- Tested as UPLC/MS systems
 - Multi component test mix
 - UPLC column
 - Gradient conditions
 - At 0.8mL/min
- UPLC/MRM system sensitivity specifications
 - To ensure complete confidence in total system performance



The ACQUITY UPLC - Xevo TQ MS LC/MS/MS System

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More Experimental Choices

- A New Collision Cell
 - A unique patented design
 - Novel use of proven T-Wave technology*
- Enhances spectral data
 - MS
 - Product ion
- Xevo TQMS is different
 - Unlike conventional tandem quadrupole MS instruments



ScanWave™ Enabled
Collision Cell

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

More Experimental Choices

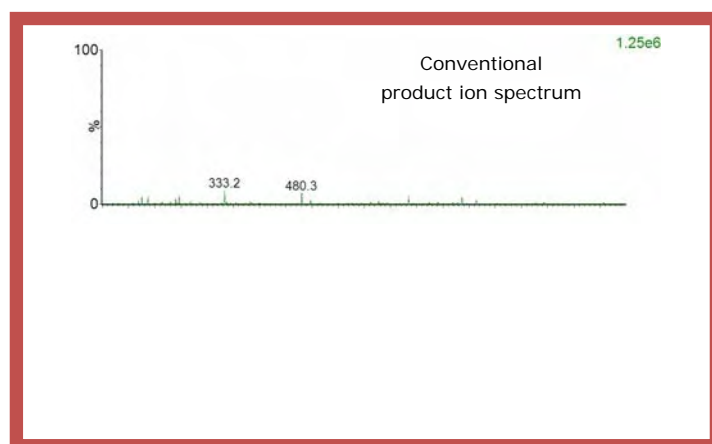
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- Standard tandem quadrupole MS
 - Very sensitive in MRM mode
 - Significantly less sensitive when acquiring in spectral mode
- ScanWave operation
 - Ions are accumulated in the collision cell
 - Ions released according to their mass to charge ratio (m/z).
 - Release of these ions is synchronised with the scanning of MS2
 - Greatly improves duty cycle
 - Enhancing sensitivity in the scanning acquisition mode.
- Xevo TQ MS
 - operates in either **standard** or **ScanWave enhanced** modes

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More Experimental Choices

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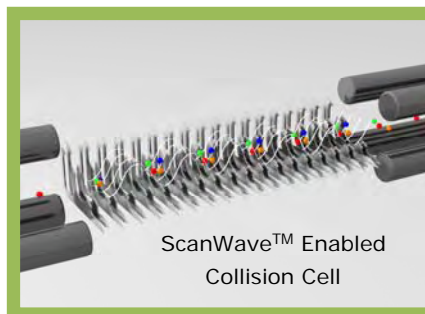
Product ion spectrum of Glu-fibrinopeptide
(Scan speed = 5,000 amu/second)

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More Experimental Choices

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- Scan Wave compatible with UPLC requirements
 - Rapid full scan acquisition rates
 - Rapid polarity switching
- Operates at standard gas cell pressures
 - Operates in ScanWave and T-wave modes
- Performance
 - No loss of sensitivity
 - No loss of speed
 - No loss of functionality
- **Providing a more versatile LC/MS System**



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More Experimental Choices

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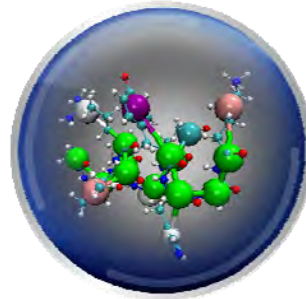
- Xevo TQ MS provides more experimental choices
 - Switches rapidly between MS and MS/MS acquisition modes
 - Collision gas on in all acquisition modes
- Unknown Screening (survey scanning)
 - Automatically generates ScanWave enhanced product ion spectra for any components found in a complex sample
 - Various triggers can be used
 - MS full scanning
 - Parent ion scanning
 - Neutral loss scanning



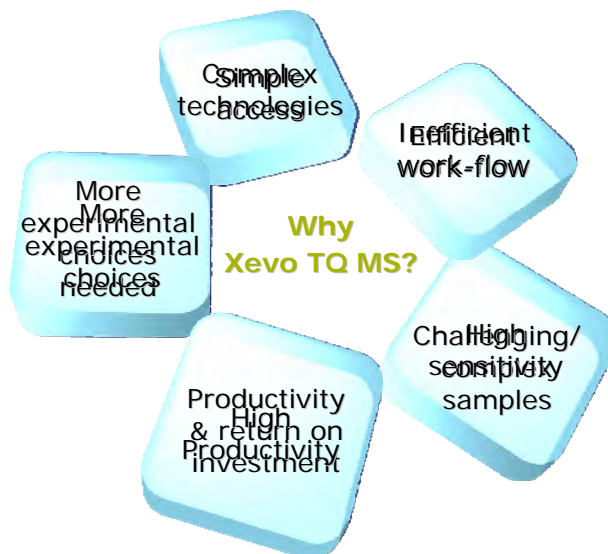
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More Experimental Choices

- Acquire **qualitative** (spectral) data & **quantification** (MRM) data in a single injection.
- MS spectral data at the same time as MRM data.
 - Valuable aid to method development
 - See all of the back ground interferences while developing your targeted MRM method.
- Use MRM data to trigger the acquisition of product ion spectra
 - spectral data provides useful extra information about a suspect MRM quantification result



Why Xevo TQ MS?



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Thank You For Your Attention

Any Questions?