

# The Xevo<sup>®</sup> TQ-S micro

**Redefining Compact Performance**



**Sensitivity Beyond Expectation**

**Gunnar Weibchen**

The power of Xevo

Waters  
THE SCIENCE OF WHAT'S POSSIBLE.™

**Xevo®**

# What is Xevo?

Xevo is robust,  
reliable, accessible  
high performance



Xevo is versatility



Xevo is innovative information  
rich analysis

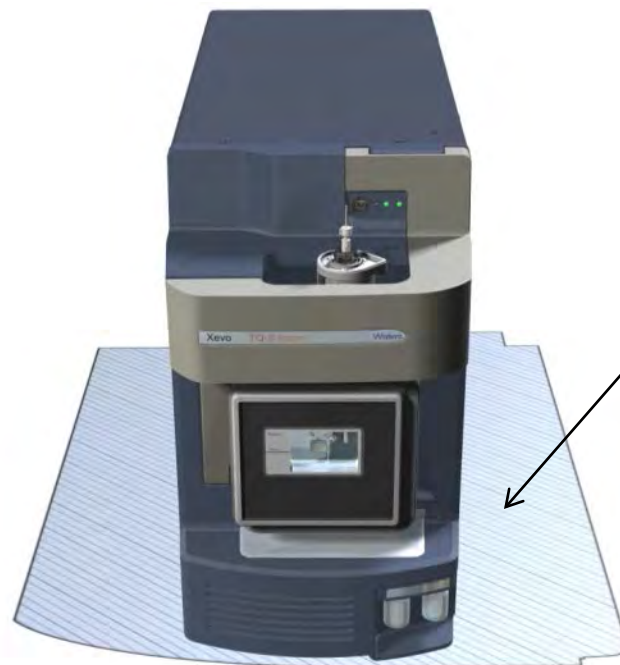
Xevo is Engineered  
Simplicity

Xevo systems are backed by providing the most complete  
system solutions backed by superior support

# Xevo TQ-S micro Compact design reduces lab footprint

Waters  
THE SCIENCE OF WHAT'S POSSIBLE.™

## Class Leading Performance that can Fit into any Lab

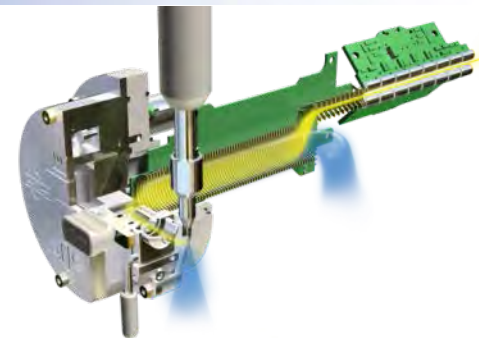



Xevo TQ MS footprint

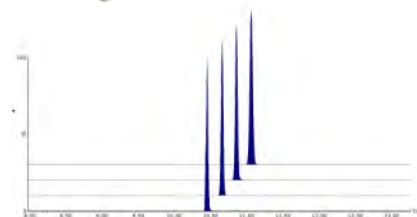
# Xevo TQ-S micro Innovative Technologies

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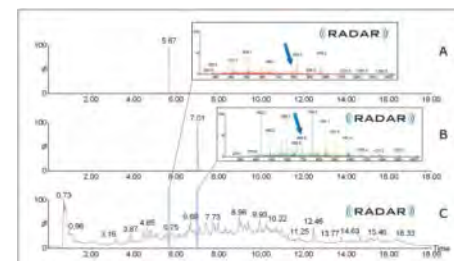
- **STEP|WAVE™** ion guide



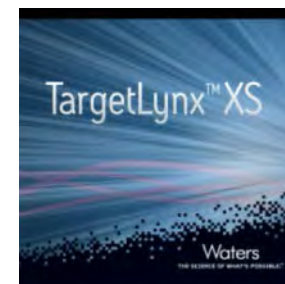
-  with high quality data



- **RADAR™** and PICs



- Quantitative workflow updates
  - Standard Addition
  - Increased no. compounds



# **Key Analytical Challenges**

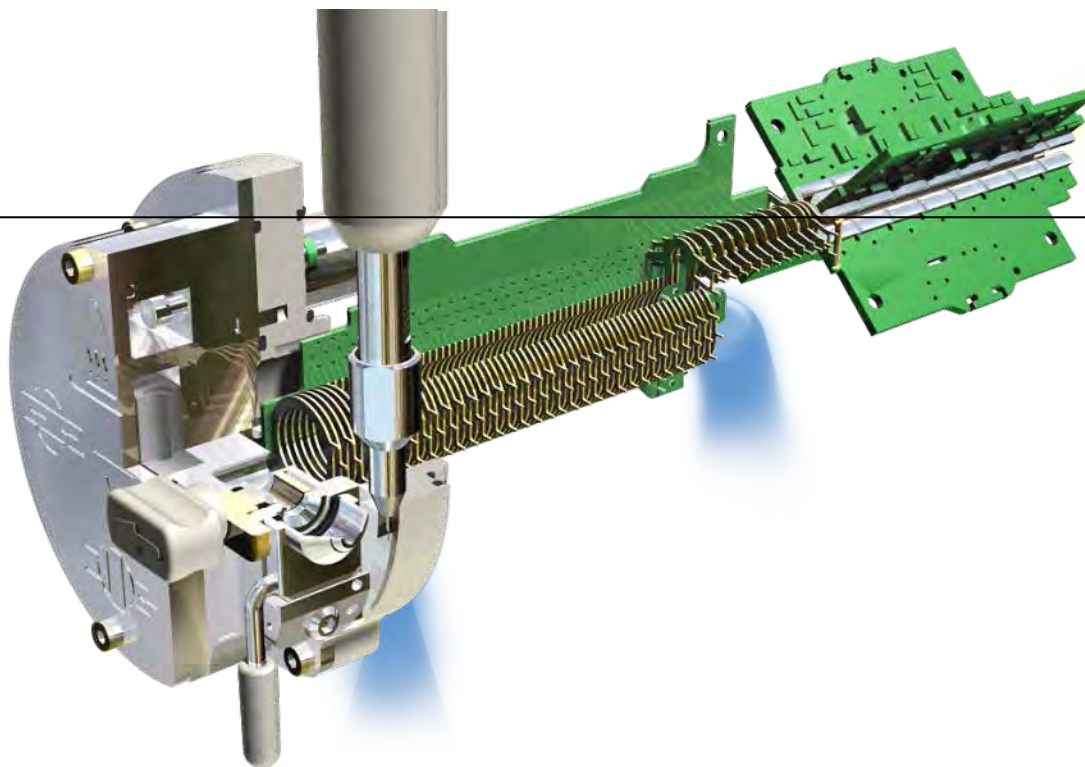
- **Increasing Instrument Uptime**
- **Reducing Sample Turnaround Time**
- **Easy Method Transfer**
- **Understanding Sample Complexity**

# Increasing Instrument Uptime



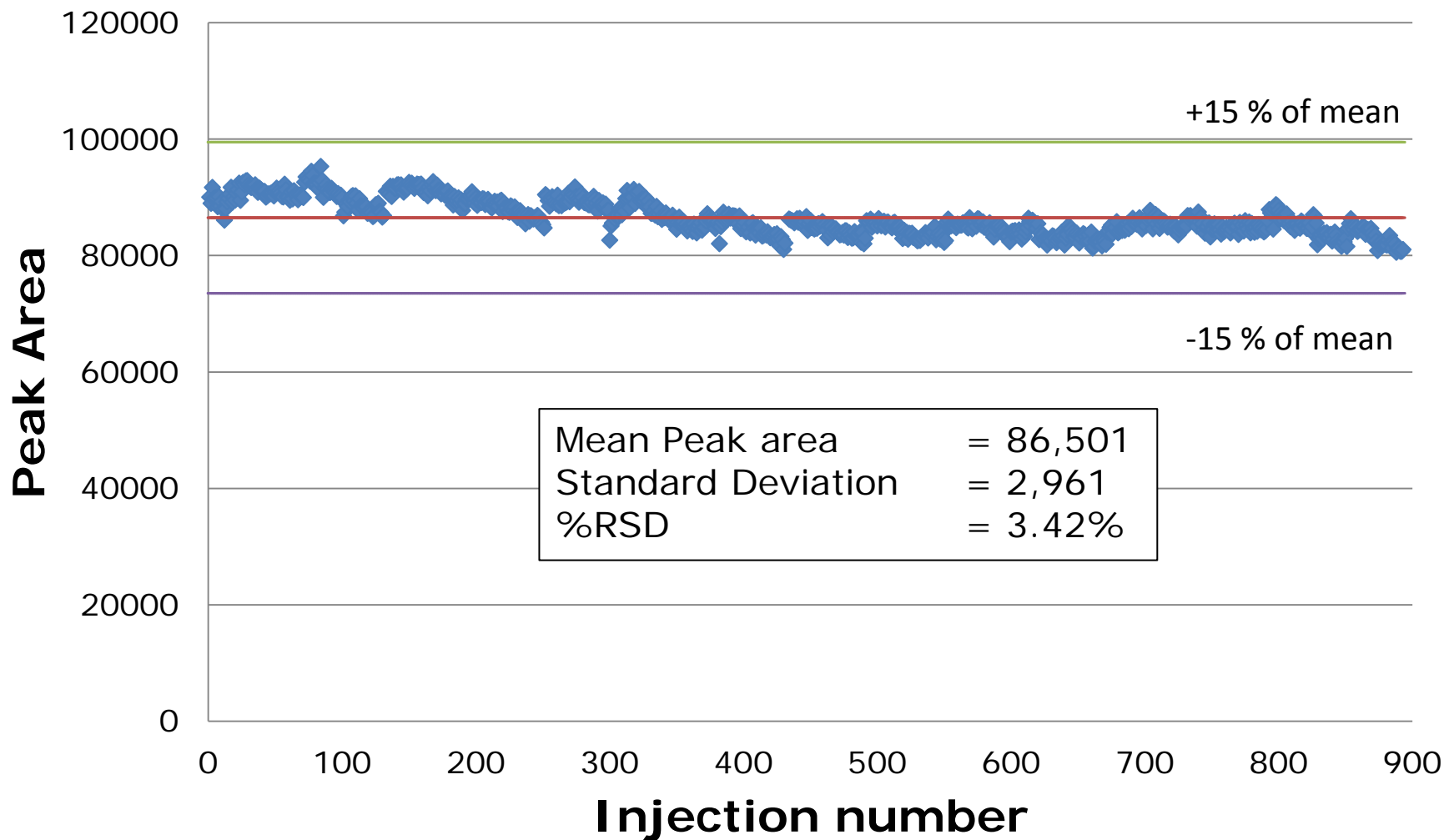
# Increasing Instrument Uptime: StepWave

- Robust performance driven by proven Z-spray and StepWave technologies





## 900 injections of verapamil in protein-precipitated plasma

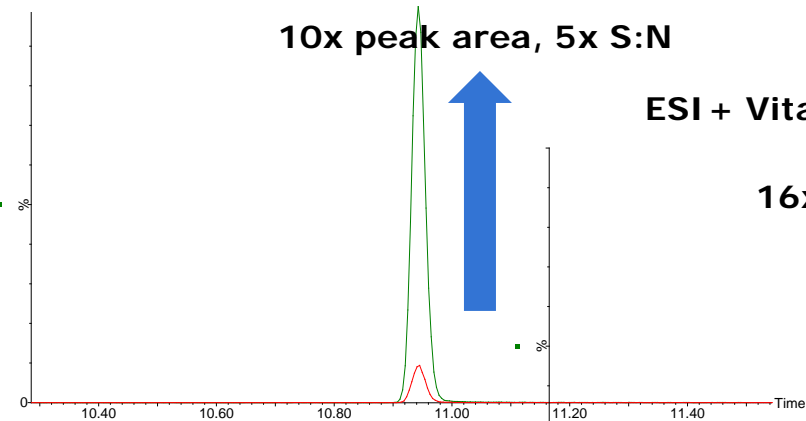


# Xevo TQ-S micro: Sensitivity improvement

- UPLC/MRM data for the Xevo TQ-S micro relative to the Xevo TQD

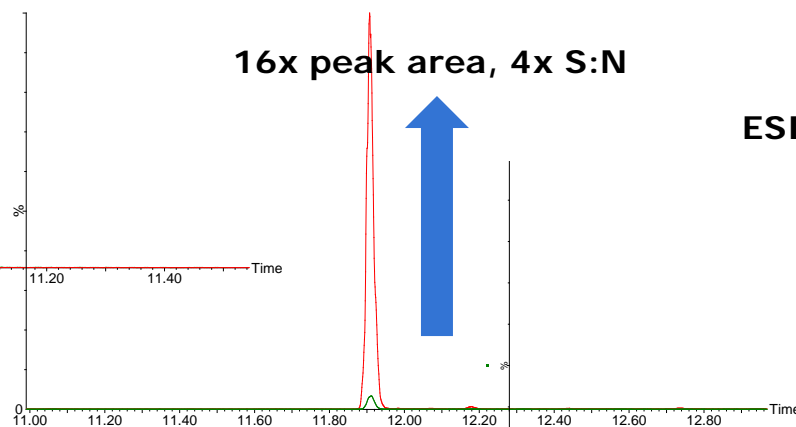
ESI - Teflubenzuron, 379>339

10x peak area, 5x S:N



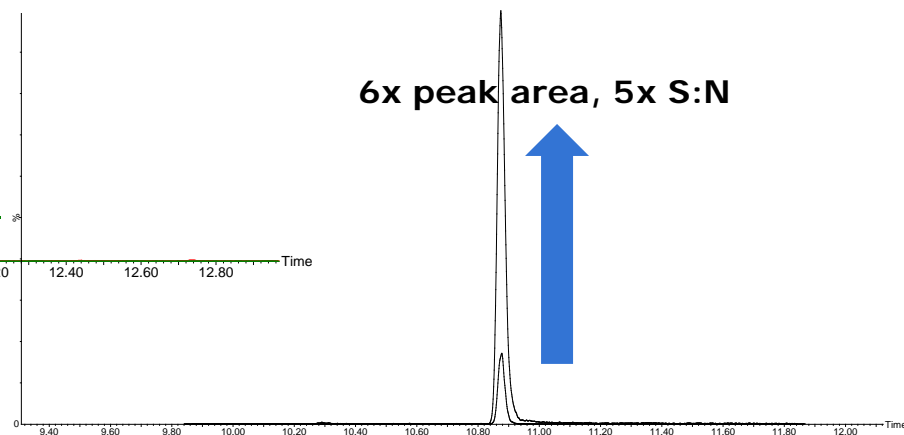
ESI + Vitamin D3, 401>383

16x peak area, 4x S:N



ESI + Bupropfezin, 306>201

6x peak area, 5x S:N

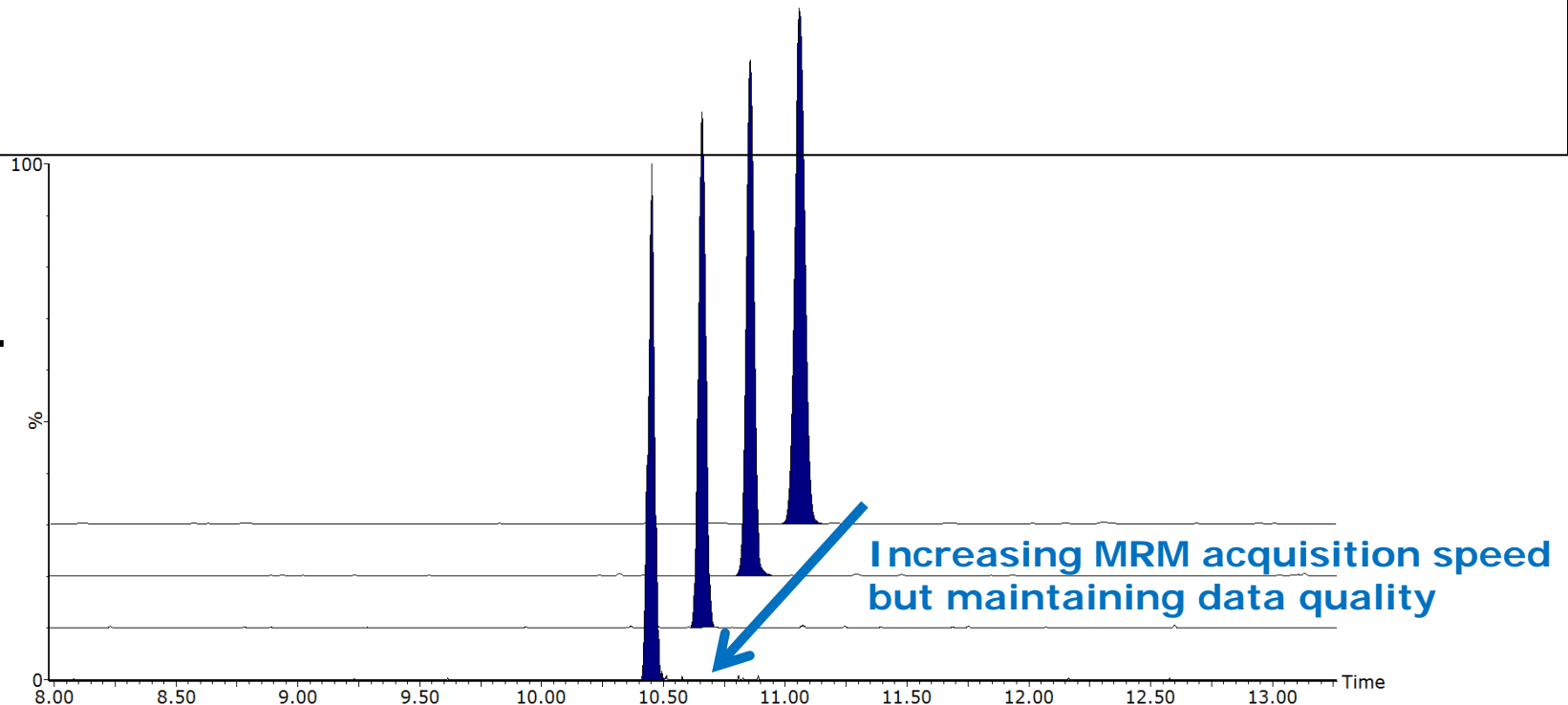


# Reducing Sample Turnaround Time

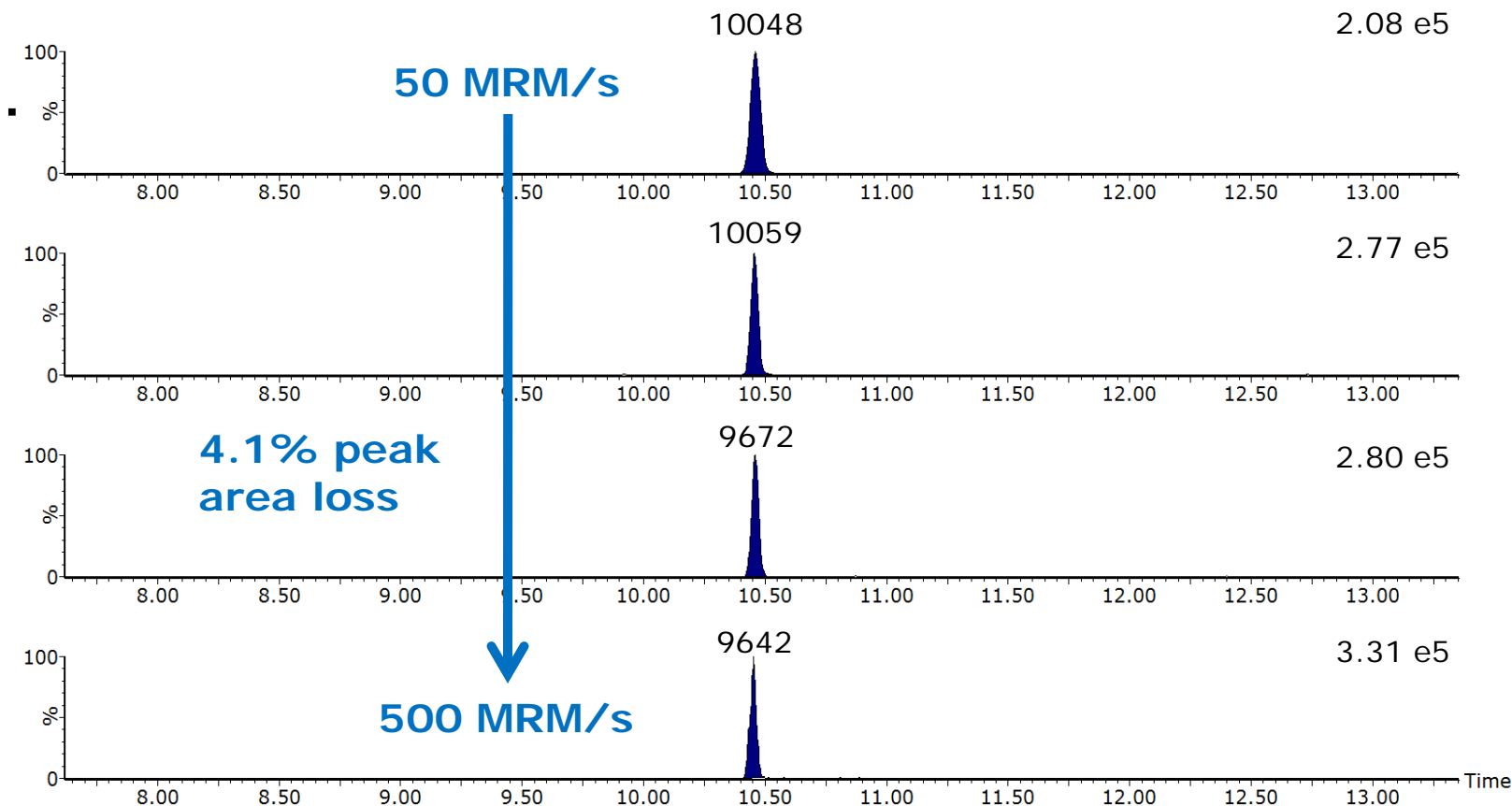


# Reducing Sample Turnaround Time: Xcelerated Ion Transfer™ (XIT)

- The new Xcelerated Ion Transfer electronics, featuring SpaceWire technology, enable rapid data acquisition without performance loss

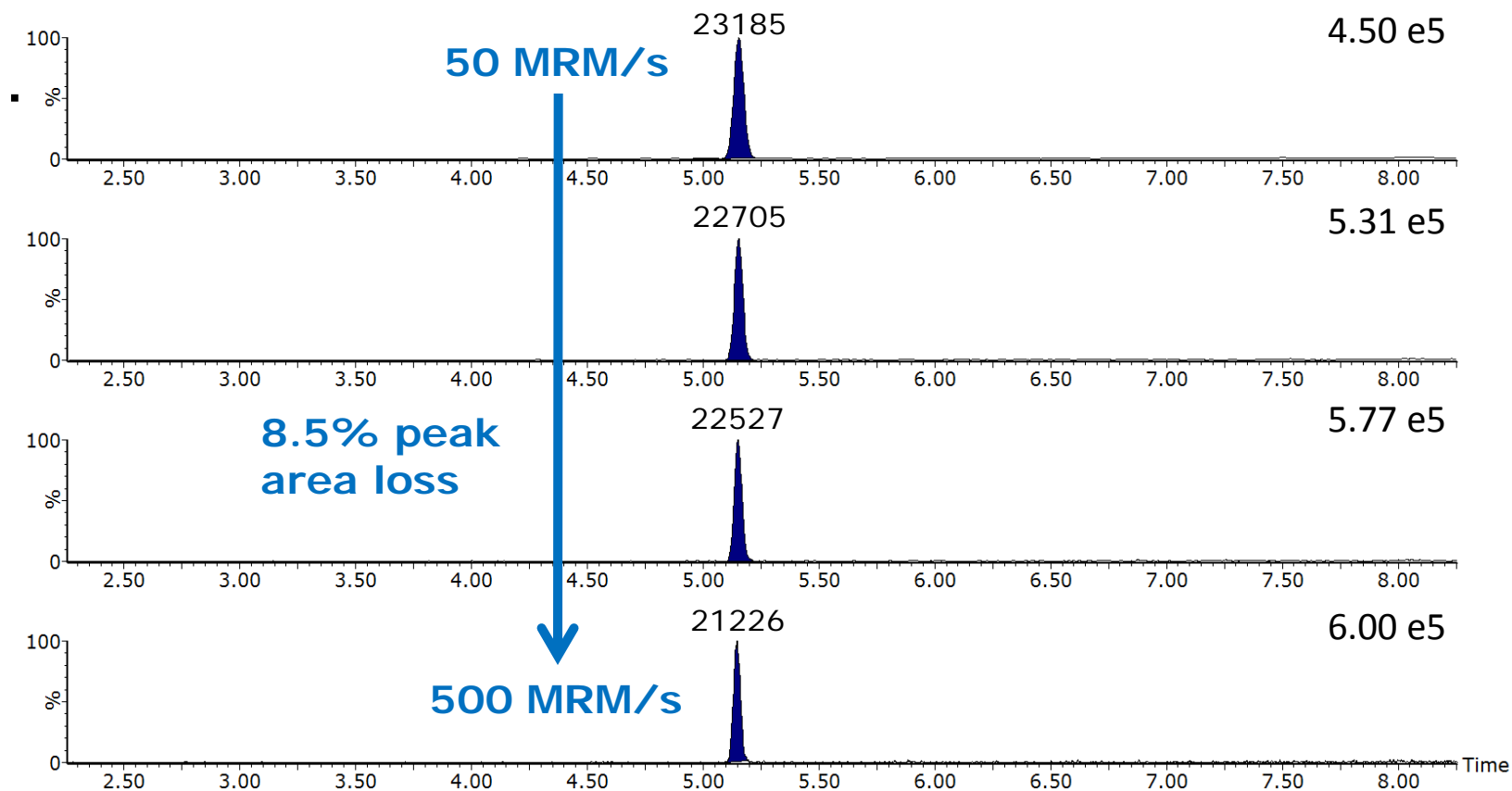


# Xevo TQ-S micro Data quality at high speed - Buprofezin



Dwell and Delay Time	%RSD (of 10 acquisitions)
10ms	2.33
5ms	5.08
3ms	2.22
1ms	5.49

# Xevo TQ-S micro Data quality at high speed - Metaxuron



Dwell and Delay Time	%RSD (of 10 acquisitions)
10ms	4.47
5ms	2.52
3ms	2.77
1ms	6.26

# Easy Method Transfer



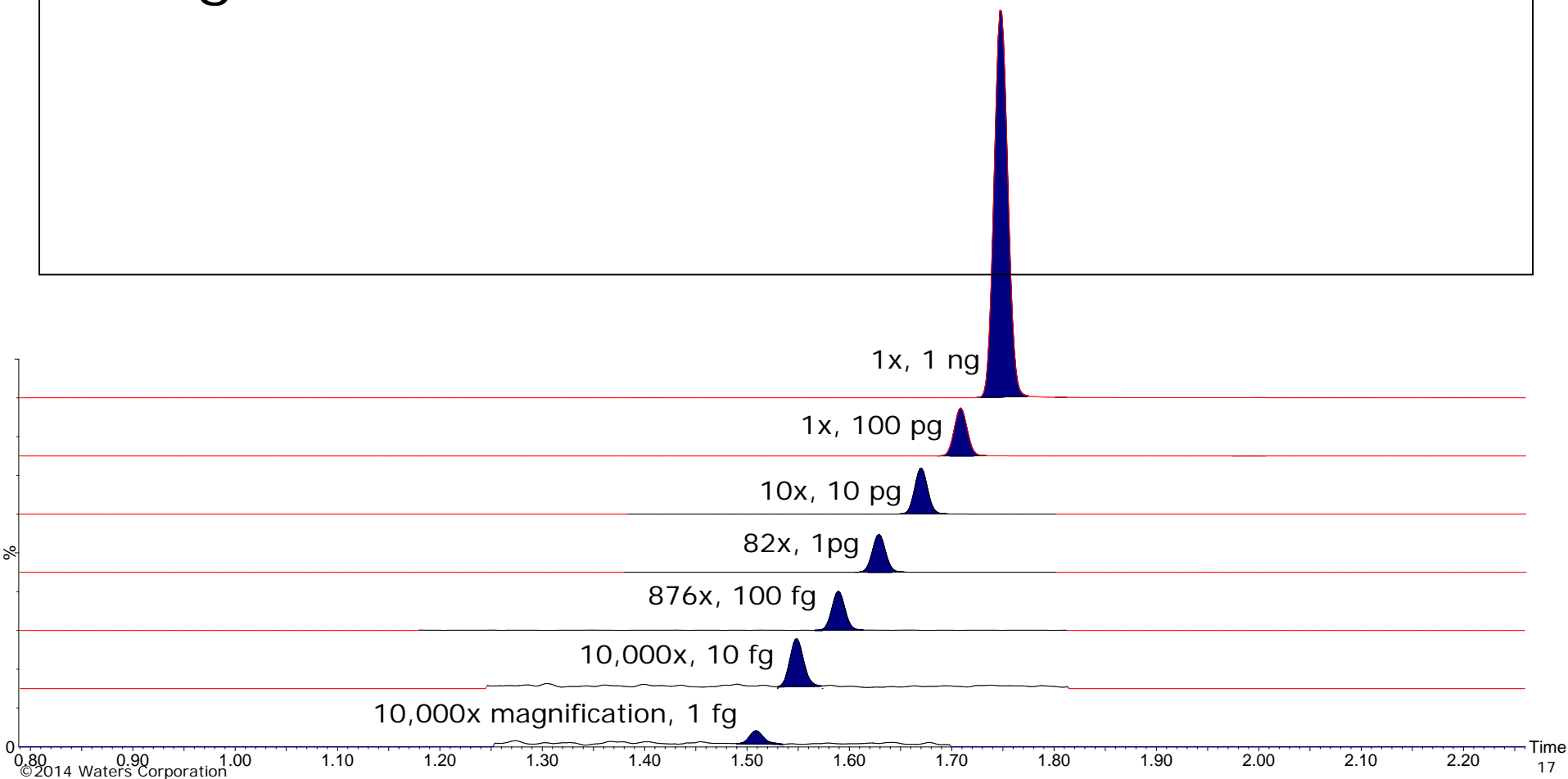
# Easy Method Transfer: Xtended Dynamic Range™ (XDR)

- Easier to transfer methods from other instruments with higher or lower sensitivities
  - Accessible sensitivity
- 
- Up to 6 orders of linear dynamic range
  - Xtended Dynamic Range made possible by updated detector electronics



# 6 orders of dynamic range: Lidocaine

- Lidocaine injections at 6 orders of dynamic range without detector saturation



# Understanding Sample Complexity



# Understanding Sample Complexity: RADAR

RADAR - Unique simultaneous acquisition of MRM and full scan data

See what you cannot see in MRM alone

 ((RADAR))

Improve  
method  
development

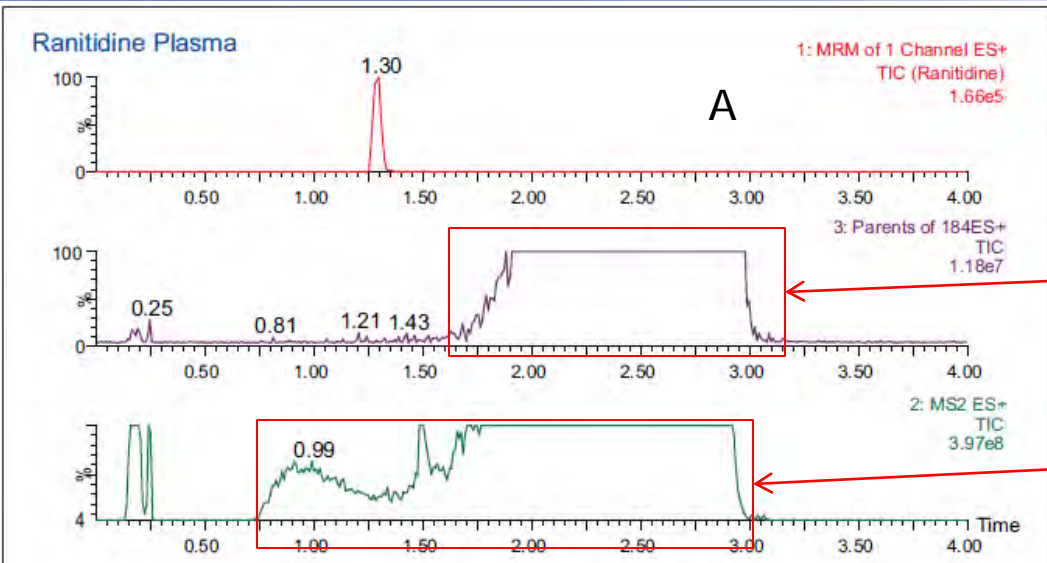
 ((RADAR))

Detect  
unexpected  
contaminants

 ((RADAR))

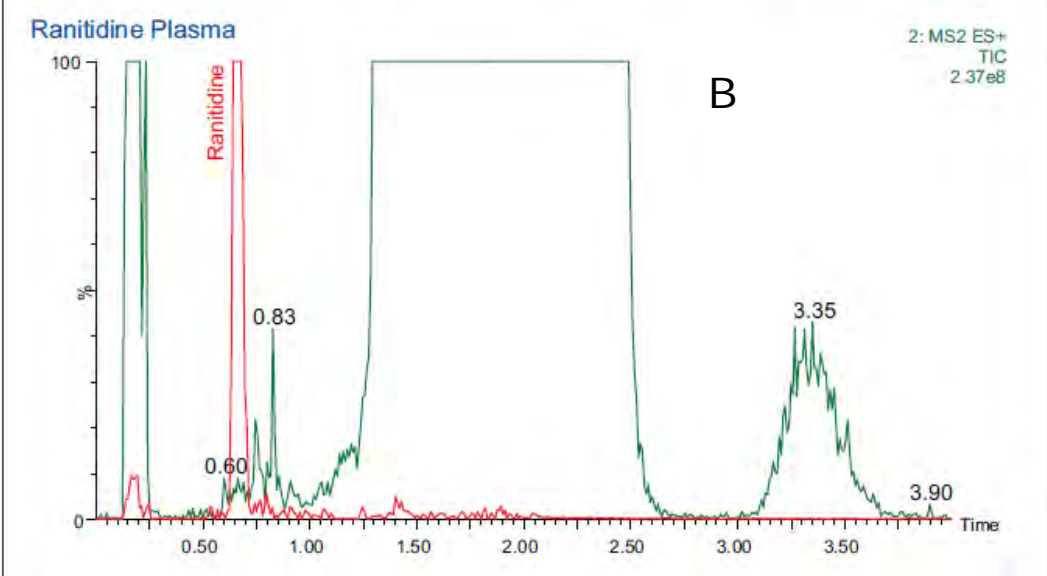
Characterise  
background  
matrix

# RADAR – Method Development



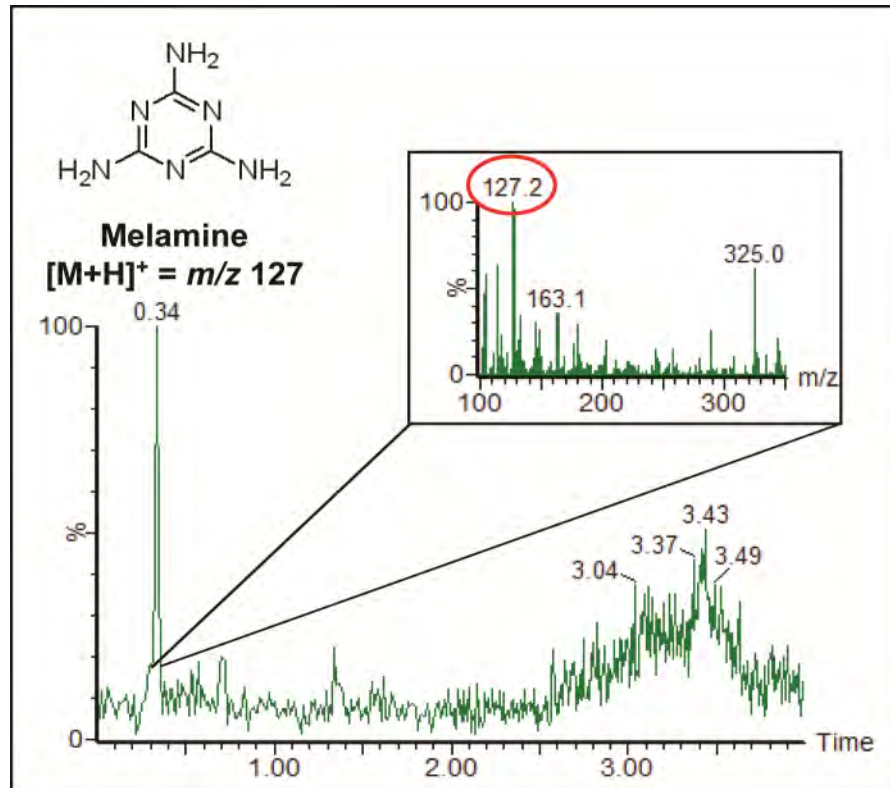
Phospholipids

All endogenous material

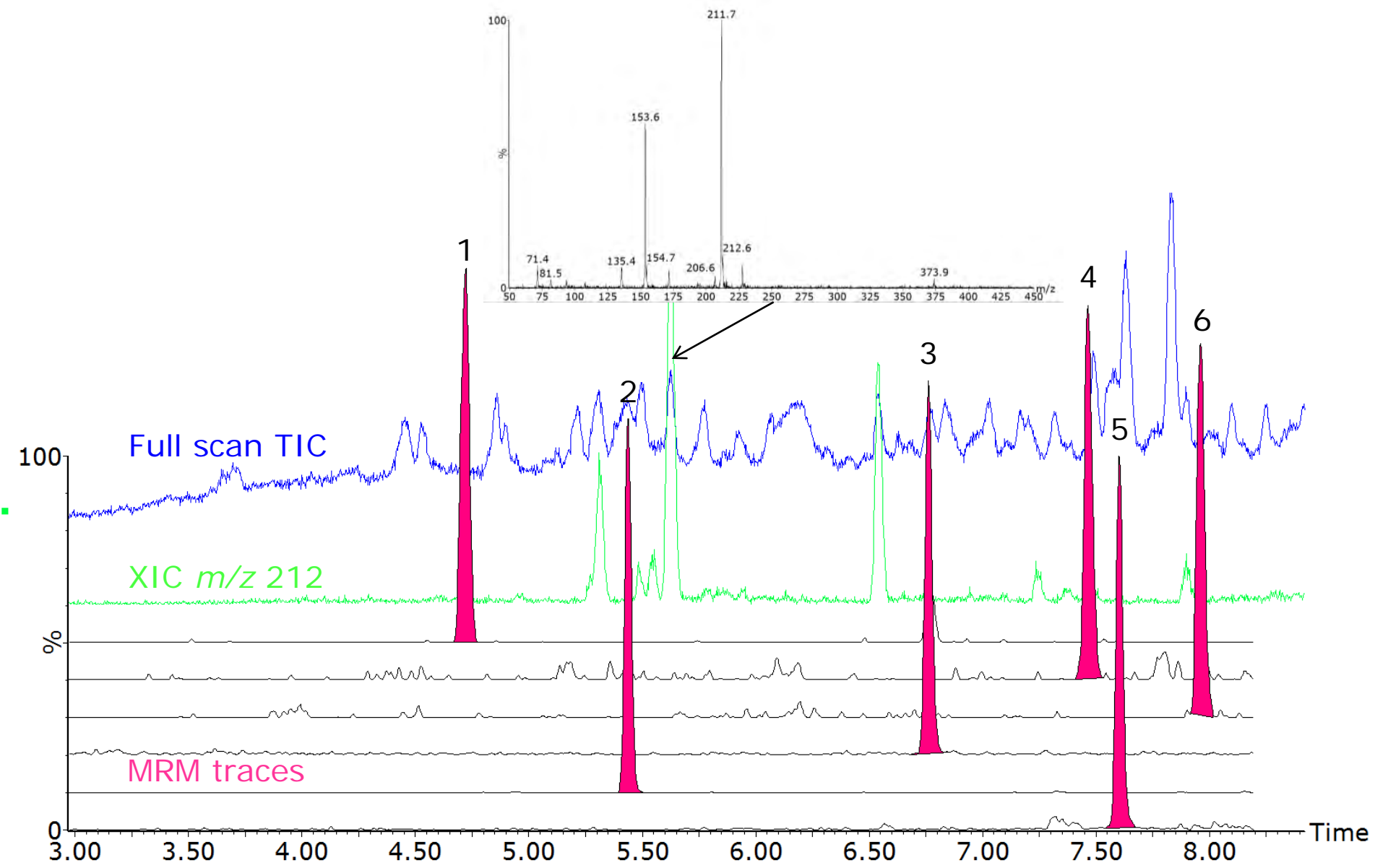


# RADAR – Unexpected contaminants

- Identify unexpected contaminants
- Melamine has been used as an adulterant in baby milk formula

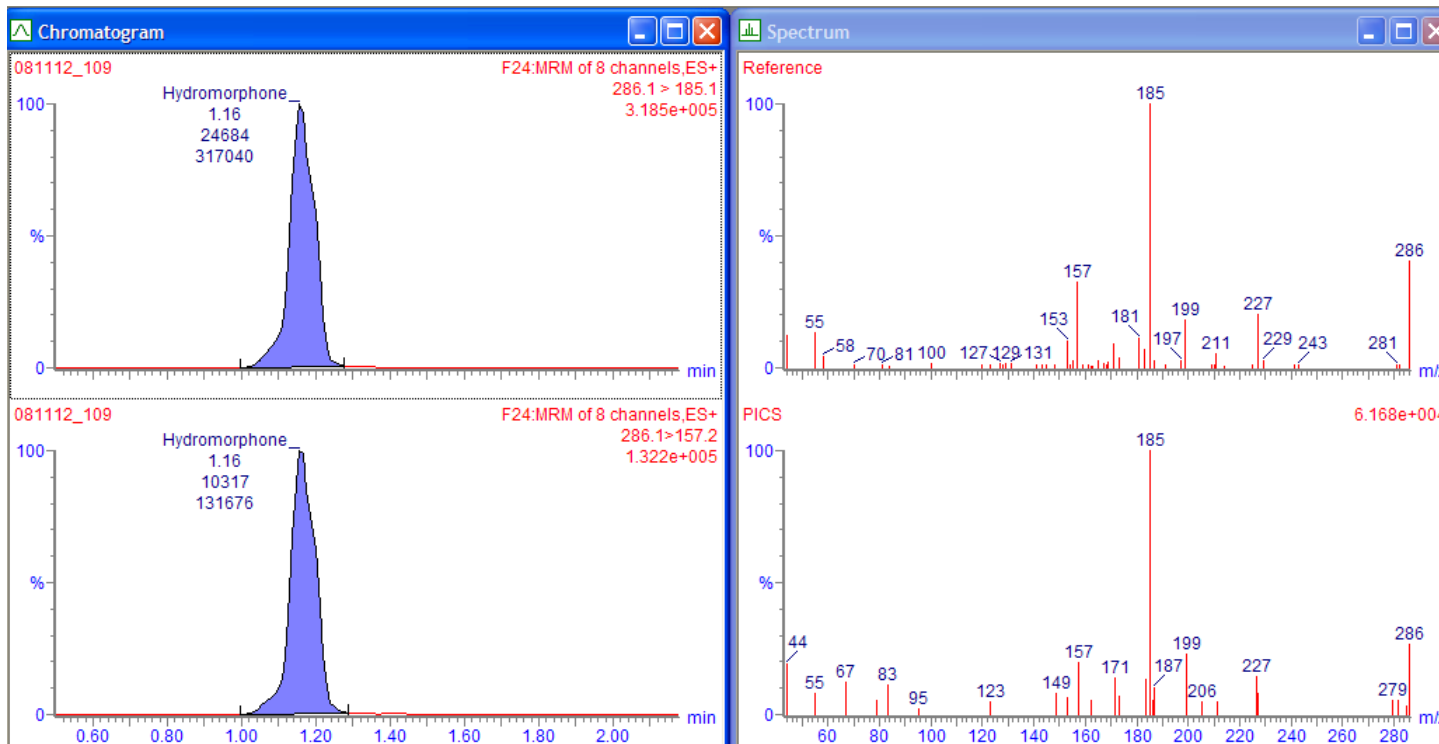


# RADAR – Characterize background matrix



# PICs – Confidence in identification

- Product Ion Confirmation scanning (PICs) enables the user to confidently identify a peak and quantify the amount present



Hydromorphone  
reference spectrum

Hydromorphone  
acquired PICs  
spectrum

# Benefits of the Xevo TQ family





INTELLI**START**™

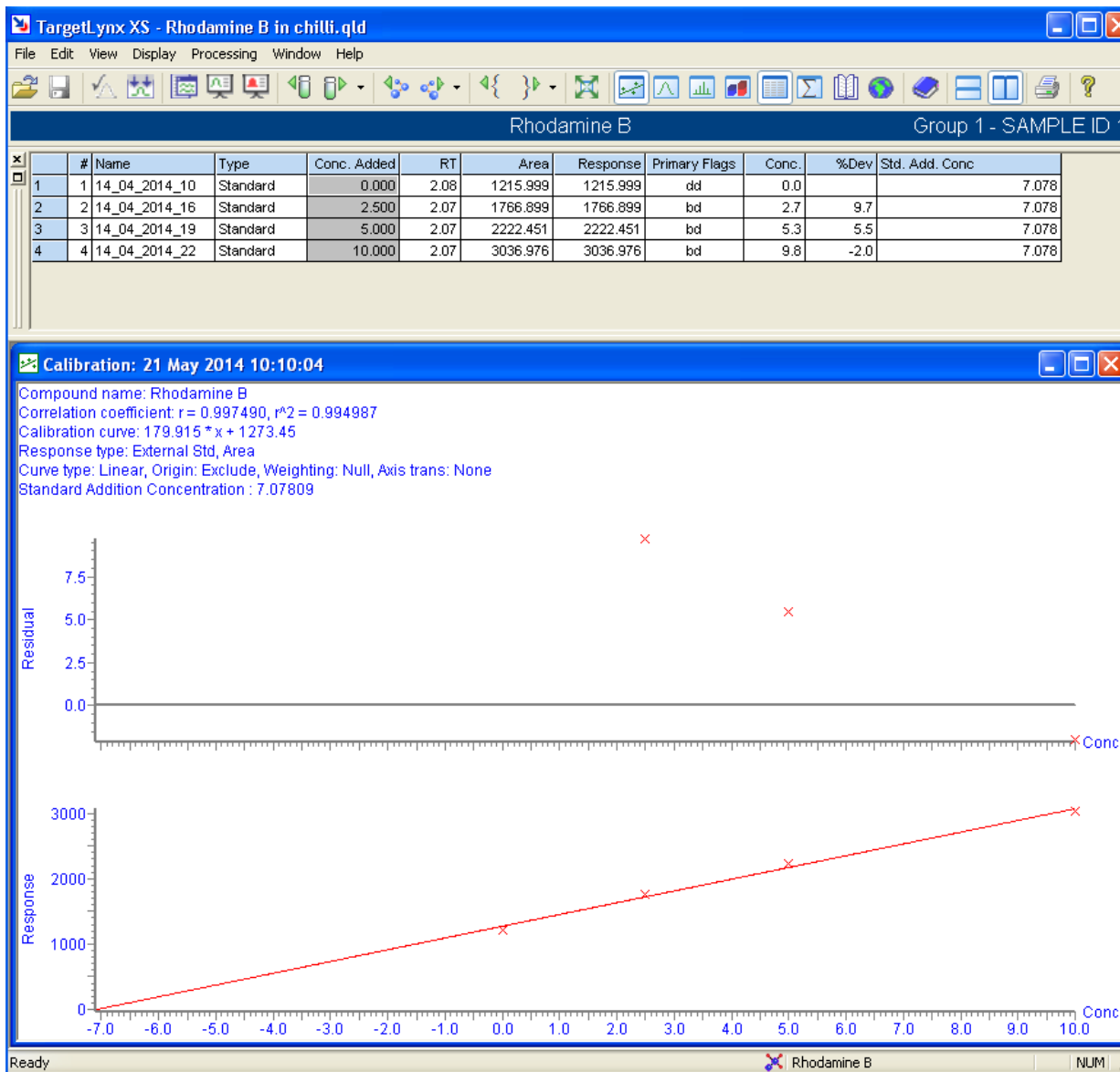
QUANPEDIA™

QCMonitor

TargetLynx™ XS

Trendplot

# TargetLynx XS Standard Addition



# Compatibility across the board

## ■ Universal Source platform



## ■ Chromatographic versatility

H-Class and I-Class



M-Class



UPC<sup>2</sup>



# Xevo TQ Portfolio

Xevo **TQ-S**



A step up to ultimate sensitivity

Xevo **TQ-S micro**



The next step in robust sensitivity

Xevo **TQD**



Rugged robust and proven

# **Xevo TQ-S micro summary**

- **Increasing Instrument Uptime**
  - Robust but sensitive performance from ZSpray and StepWave
- **Reducing Sample Turnaround Time**
  - Fast MRM acquisition rates with high quality data from XIT
- **Easy Method Transfer**
  - Wider dynamic range for maximum performance with XDR
- **Understanding Sample Complexity**
  - Use RADAR and PICs technology to combine scan data with quantitative MRM analysis

**Questions?**

2014