

The example data presented here represents typical expected performance and is provided for the purposes of illustration and user guidance only. All Waters analytical instruments are installed and tested in accordance with Waters Standard Performance Tests.

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Xevo TQ-XS UPLC / MRM

System Robustness – Positive ion ESI

2000 Injections of Protein Precipitated Plasma spiked with Sulfadimethoxine

This document presents example data obtained using an ACQUITY UPLC / Xevo TQ-XS system when operating in the ESI positive MRM mode at short dwell times. The test is based on monitoring the UPLC MRM response for 2000 replicate injections (over a 85 hour period) of a protein precipitated human plasma sample spiked with Sulfadimethoxine, demonstrating the reproducibility and robustness of this system configuration.

EXPERIMENTAL CONDITIONS

Samples

Test sample: 0.1pg/μL Sulfadimethoxine (in protein precipitated human plasma diluted 10:1 in water prior to injection)

LC Conditions

Instrument: ACQUITY I-Class
Column: ACQUITY BEH C18, 50 mm x 2.1 mm, 1.7 μm
Flow Rate: 0.8 mL/min
Injection volume: 10 μL
Mobile phase A: 0.01% Formic acid + 0.05% Ammonia in Water
Mobile phase B: 0.01% Formic acid in Acetonitrile
Sample manager wash: 0.01% Formic acid in Acetonitrile
Sample manager purge: 90:10 Water : Acetonitrile +0.01% Formic acid
Seal wash: 90:10 Water : Acetonitrile +0.01% Formic acid
Column Temp: 40 °C
Sample Temp: 20 °C

UPLC Gradient

Time (min)	%A	%B	Curve
0.00	90	10	-
0.20	90	10	6
1.50	30	70	6
1.80	30	70	6
2.00	90	10	6
2.50	90	10	6

MS Conditions

Instrument: Xevo TQ-XS
Ionization mode: ESI positive
MS acquisition: MRM = m/z 311 – m/z 156, 5ms dwell. 0Da span
Resolution: Peak width at half-height of precursor and product ions 0.7 ± 0.1 Da

Software

MassLynx: V4.1, SCN905

RESULTS

Integrated chromatographic peak areas were measured for each of the sample injections made. The peak area results for all 2000 injections of the spiked protein precipitated plasma sample are presented in figure 1 demonstrating the robustness of this analytical system. The relative standard deviation of the measured peak areas for these injections was calculated to be <3%.

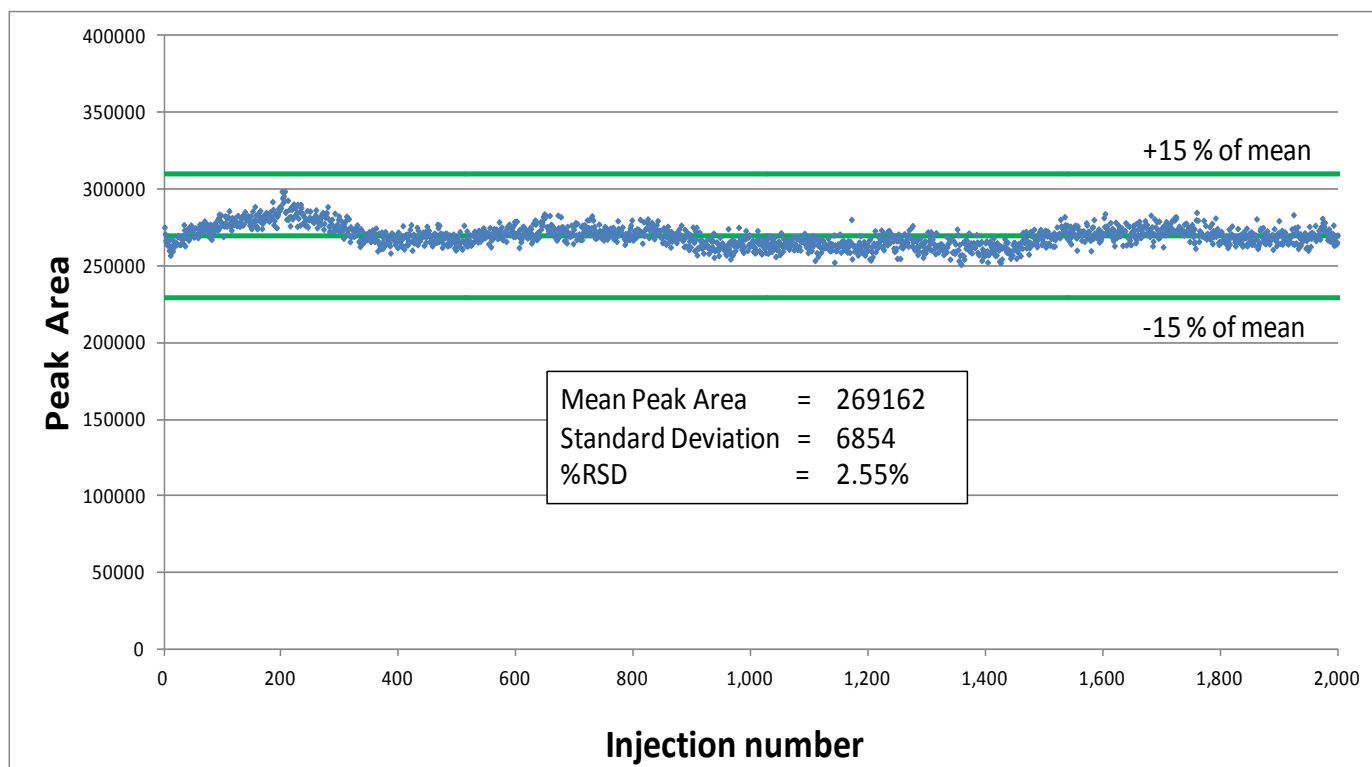


Figure 1.
Peak area response versus injection number
2000 injections of protein precipitated plasma spiked with Sulfadimethoxine

Figure 2 shows the minimal variation between the UPLC MRM chromatograms obtained for injection 495, 995, 1495 and 1995.

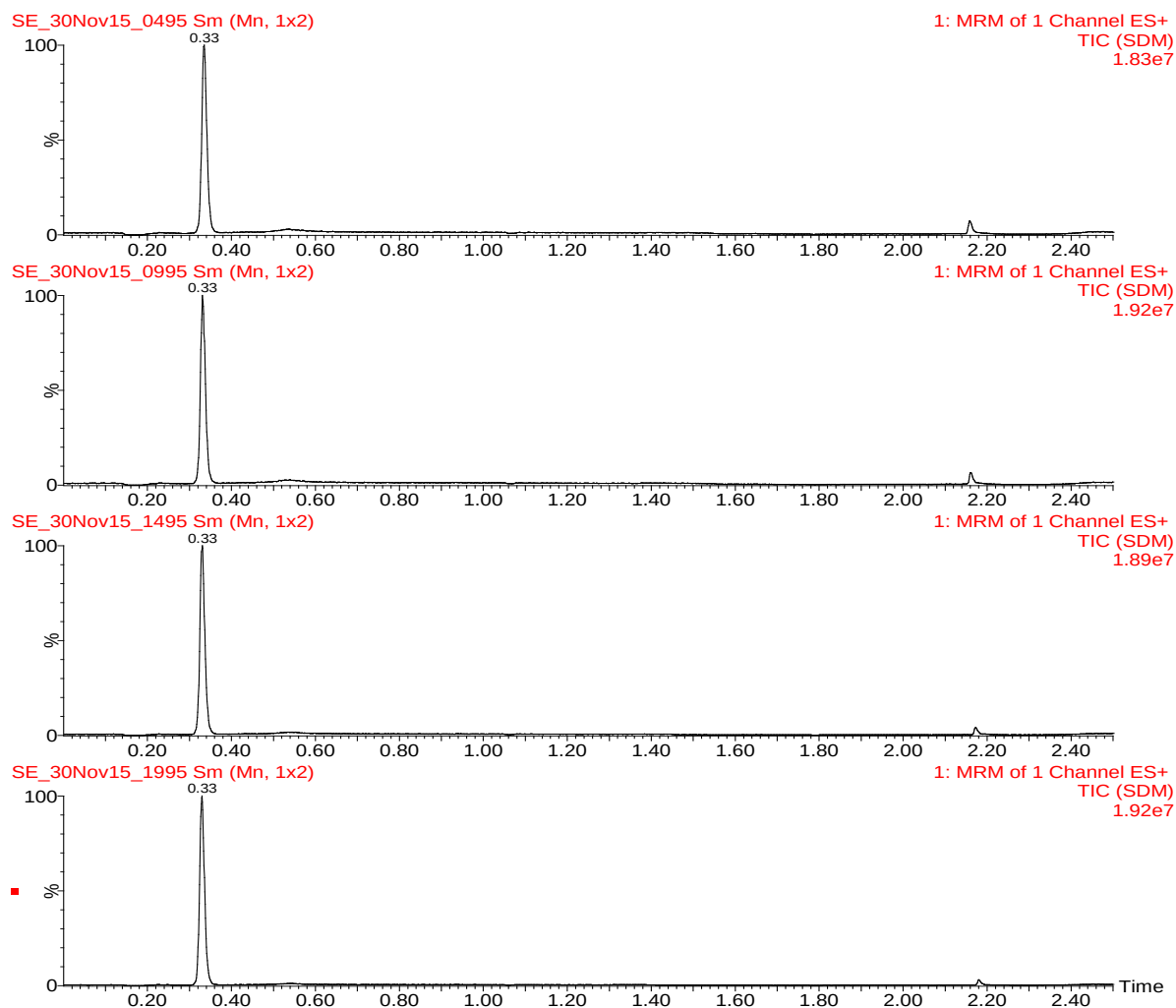


Figure 2.

UPLC MRM chromatograms for injection numbers 495, 995, 1495 and 1995



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