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Note d'application

QuanLynx on Waters ZMD LC-MS System for Automated Methods Development

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Abstract

This application note demonstrates how QuanLynx can be utilized on a single quadrupole instrument such as the Waters ZMD.

Introduction

QuanLynx is an integral function of the MassLynx software (version 3.3 or higher). It offers automated MS method development for quantitation using SIR or MRM. The automated process includes instrument optimization, data acquisition and quantification. QuanLynx can be implemented on tandem quadrupole instruments (Micromass Quattro II, Quattro LC and Quattro Ultima) as well as single quadrupole instruments (Waters ZMD).

The application of QuanLynx on tandem quadrupole instruments has been shown elsewhere.[1] The purpose of this note is to demonstrate how QuanLynx can be utilized on a single quadrupole instrument such as the Waters ZMD. A mixture of Acetaminophen/Caffeine was used as the sample analyte. Manual quantitation of the mixture is also performed. The quantitation results by QuanLynx and by Manual quantitation are compared.

Experimental

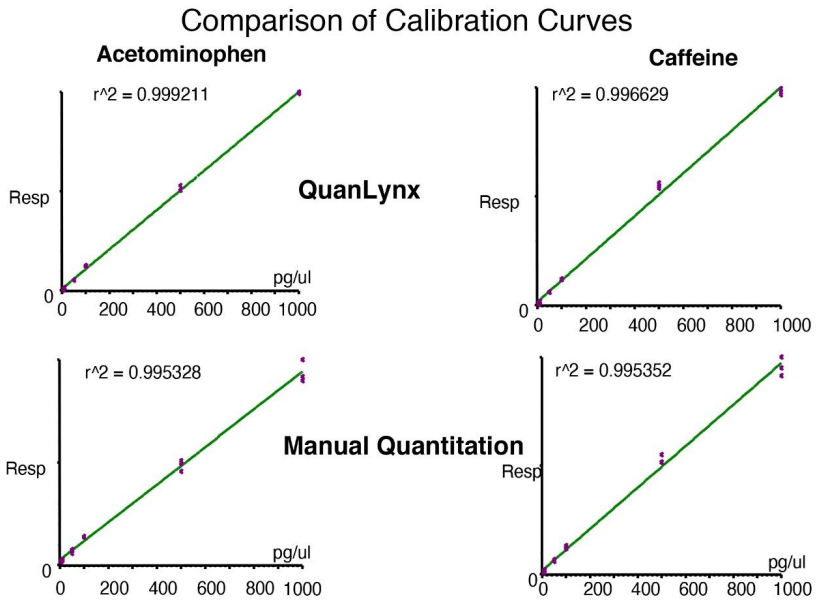
HPLC Conditions

System:	Waters Alliance 2690 with 996 PDA
Column:	Waters Symmetry C_{18}, 3.5 µm, 2.1 x 50 mm
Mobile phase:	MeOH/H_2O 30/70 Isocratic
Injection volume:	10 µL
Flow rate	0.2 mL/min.

MS Conditions

System:	Waters ZMD
Ionization mode:	ESI+

Results and Discussion



Comparison of Results

		Acetaminophen		Caffeine	
		QuanLynx	Manual	QuanLynx	Manual
Mean	L1	219.1	220.7	227.7	229.7
(pg/µL)	L2	73.4	82.1	78.2	80.6
SD	L1	1.15	9.70	1.20	10.3
	L2	3.65	5.44	2.68	4.71
%CV	L1	0.53	4.40	0.53	4.48
	L2	4.97	6.63	3.42	5.85
% Error	L1	9.55	10.4	13.8	14.8
	L2	-2.13	9.47	4.26	7.46
LOD (pg/µL)		10.7	9.21	6.84	14.4
LOQ (pg/µL)		35.6	30.7	22.8	48.0
r^2		0.999	0.995	0.997	0.995

Conclusion

Results show that in addition to saving in time, QuanLynx also offers better precision and accuracy, compared to manual quantitation.

Featured Products

Alliance HPLC System <https://www.waters.com/534293>

MassLynx MS Software <https://www.waters.com/513662>

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