

Application Note

ACQUITY UPLC Analysis of Organic Acids

Waters Corporation

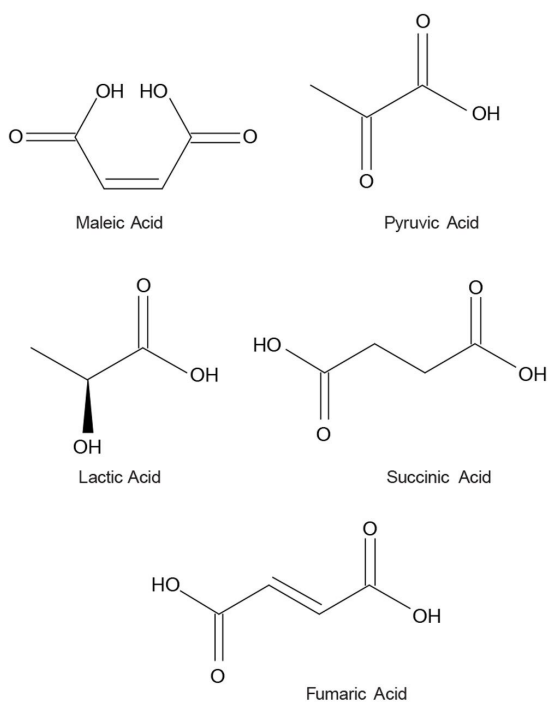
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application brief demonstrates the UPLC analysis of organic acids.

Introduction

Structures



Experimental

UPLC Conditions

Column:	ACQUITY BEH Amide, 2.1 x 100 mm, 1.7 μ m
Part Number:	186004801
Mobile phase A:	50/50 MeCN/H ₂ O with 10 mM CH ₃ COONH ₄ , pH 9.0
Mobile phase B:	95/5 MeCN/H ₂ O with 10 mM CH ₃ COONH ₄ , pH 9.0
Gradient Flow Rate:	0.6 mL/min

Injection Volume: 5.0 μ L

Column Temp: 50 $^{\circ}$ C

Sample Temp: 5 $^{\circ}$ C

Strong/Weak needle wash: 95/5 MeCN/H₂O

Seal wash: 10/90 MeOH/H₂O

Instrument: ACQUITY UPLC and TQD

Gradient:

Time (min)	%A	%B
Initial	0.1	99.9
0.4	0.1	99.9
0.5	40.0	60.0
2.0	70.0	30.0
2.01	0.1	99.9
5.0	0.1	99.9

MS Conditions

Instrument: ACQUITY TQD

Ionization Mode: ES⁻

Capillary Voltage:	4.0 kV
Cone Voltage:	-25 V
Collision Energy:	10 eV
Extractor:	3 V
RF Lens:	0.1 V
Source Temp:	130 °C
Desolvation Temp:	350 °C
Desolvation Gas:	650 L/hr
Cone Gas:	0 L/hr
Collision Gas:	0.1 mL/min
MRM condition:	Pyruvic acid: 86.92 > 42.9 Lactic acid: 88.92 > 42.9 Succinic acid: 116.93 > 72.9 Maleic and Fumaric acid: 114.88 > 70.9

Results and Discussion

COMPOUNDS

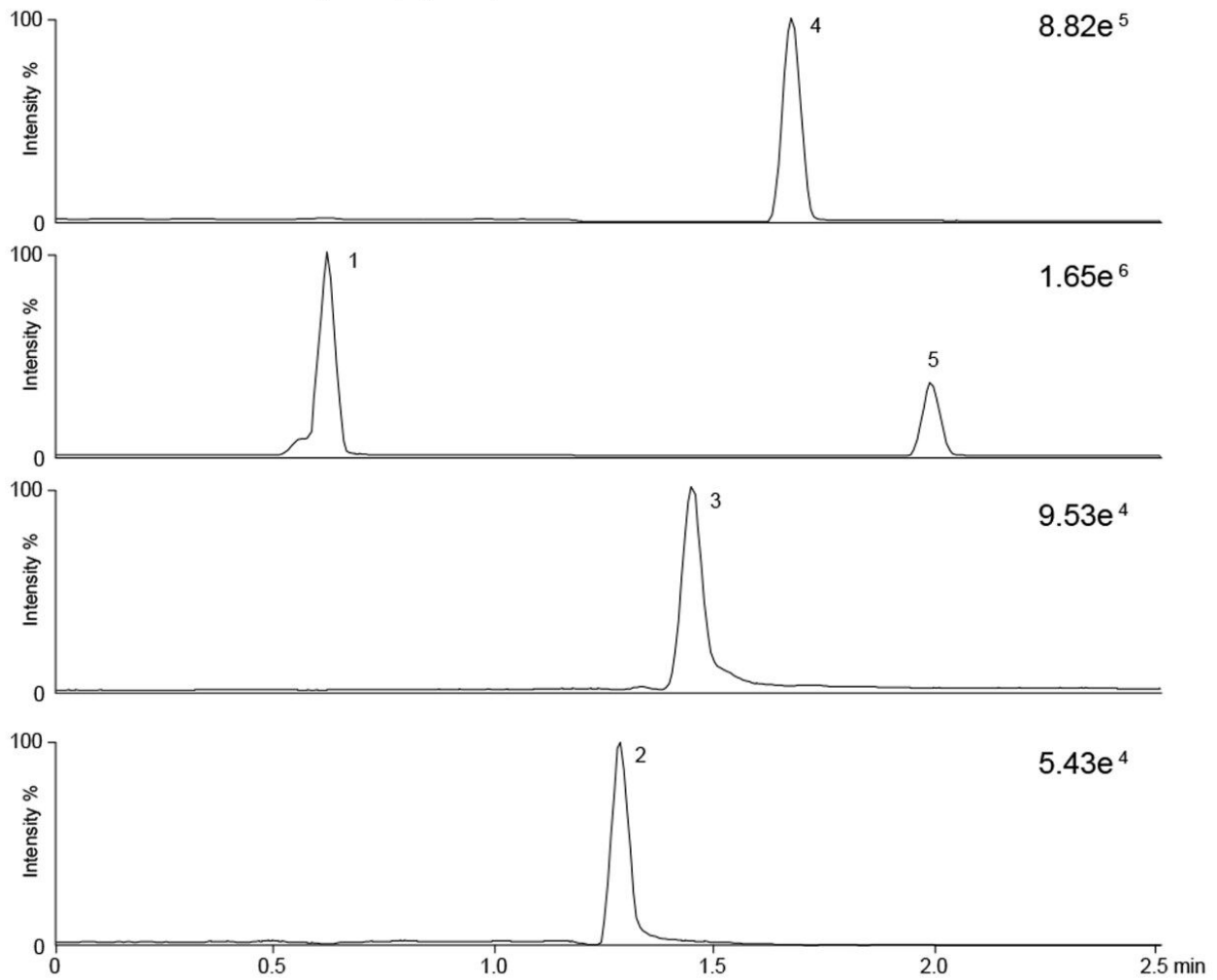
1. Maleic acid (1 ppm)

4. Succinic acid (50 ppm)

2. Pyruvic acid (50 ppm)

5. Fumaric acid (50 ppm)

3. Lactic acid (50 ppm)



Featured Products

[ACQUITY UPLC System <https://www.waters.com/514207>](https://www.waters.com/514207)

[Xevo TQD Triple Quadrupole Mass Spectrometry <https://www.waters.com/134608730>](https://www.waters.com/134608730)

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