

ACQUITY UPLC Analysis of Morphine

Waters Corporation

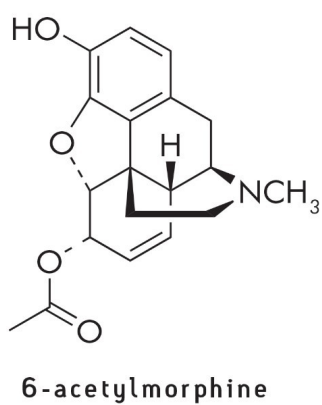
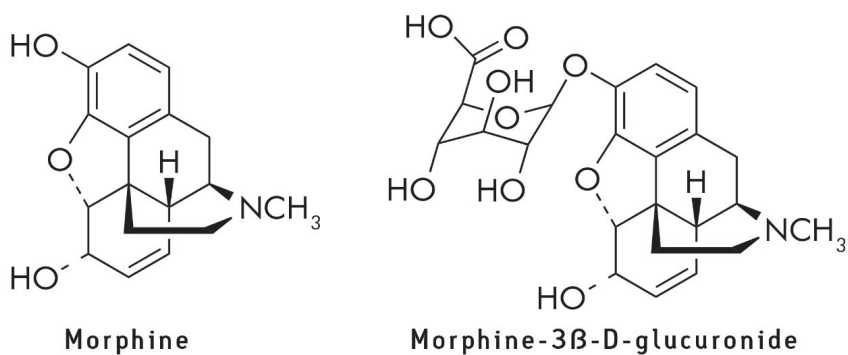
Abstract

This application brief highlights the analysis of morphine on ACQUITY UPLC BEH Amide Columns.

Introduction

The compounds analysed in this study are:

1. 6-acetylmorphine (100 ng/mL)
2. Morphine (100 ng/mL)
3. Morphine-3 β -D-glucuronide (5 g/mL)



Experimental

Chromatographic Conditions

Column:	ACQUITY UPLC BEH Amide, 2.1 x 50 mm, 1.7 μm
Part Number:	186004800
Mobile Phase A:	50/50 MeCN/H ₂ O with 10 mM NH ₄ COOH and 0.125% HCOOH, pH 3

Mobile Phase B:	90/10 MeCN/H ₂ O with 10 mM NH ₄ COOH and 0.125% HCOOH, pH 3
Flow Rate:	0.6 mL/min
Injection Volume:	5 µL (PLNO)
Sample Diluent:	75/25 MeCN/MeOH with 0.2% HCOOH
Column Temperature:	30 °C
Weak Needle Wash:	95/5 MeCN/H ₂ O
Instrument:	Waters ACQUITY UPLC with ACQUITY SQD

Gradient

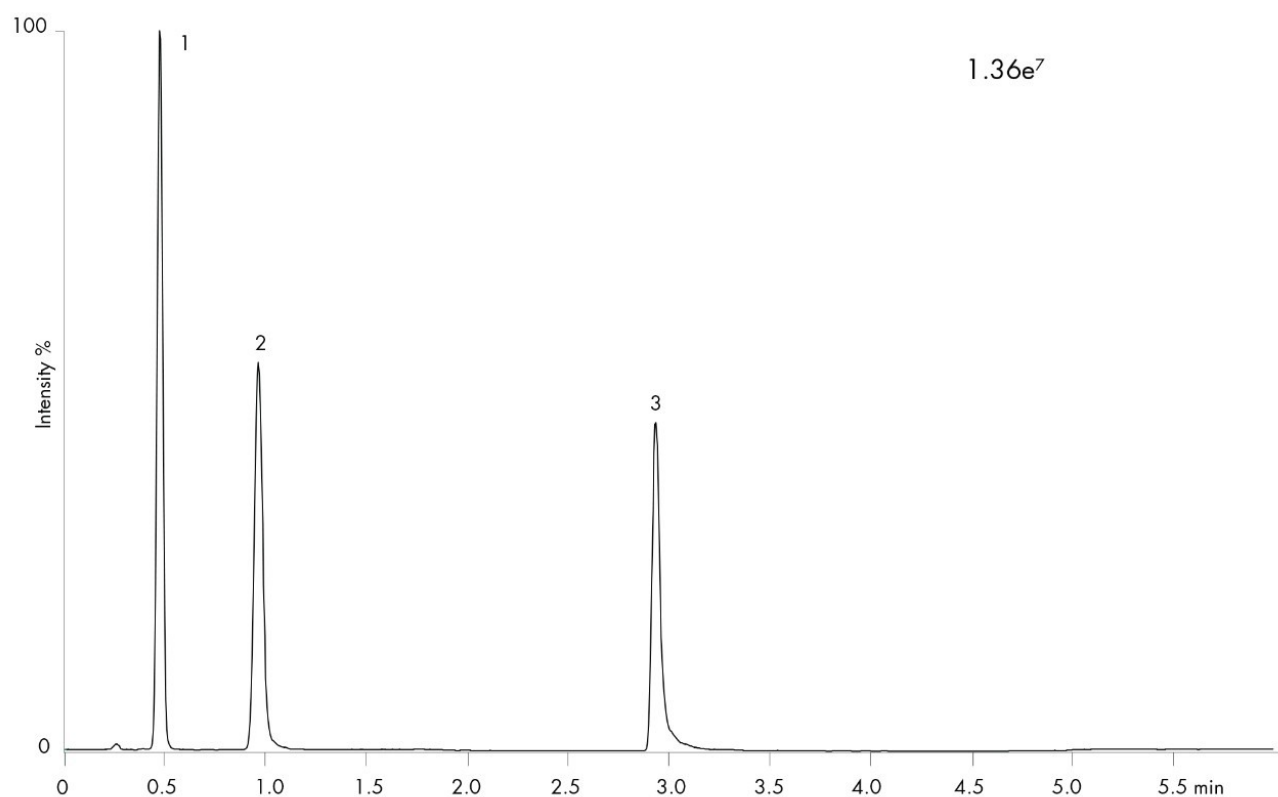
Time (min)	Profile	
	%A	%B
Initial	0.1	99.9
1.05	0.1	99.9
4.35	99.9	0.1
4.50	0.1	99.9
6.00	0.1	99.9

Mass Spectrometer Conditions

Ionization Mode:	ES+
Capillary:	3.0 KV

Cone:	30 V (6-Acetyl morphine and Morphine), 40 V (Morphine-3 β -D-glucuronide)
Source Temperature:	120 °C
Desolvation Temperature:	350 °C
Desolvation Gas Flow (L/Hr):	800
SIR <i>m/z</i> :	329.5 (6-Acetyl morphine); 287.5 (Morphine) 463.6 (Morphine-3 β -D-glucuronide)
Dwell Time:	0.1 s

Results and Discussion



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