

## ACQUITY UPLC Analysis of Morphine

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Waters Corporation

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### Abstract

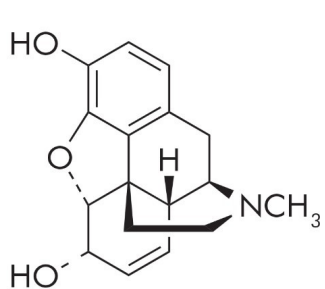
This application brief highlights the analysis of morphine on ACQUITY UPLC BEH Amide Columns.

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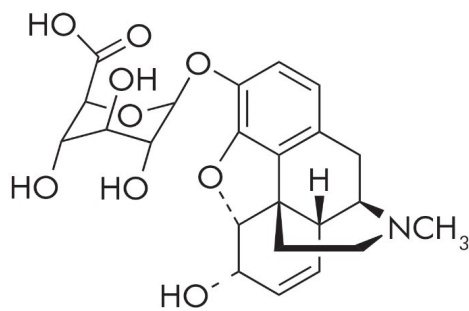
### Introduction

The compounds analysed in this study are:

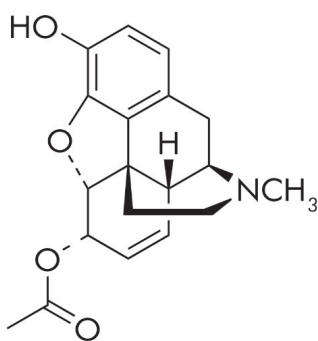
1. 6-acetylmorphine (100 ng/mL)
2. Morphine (100 ng/mL)
3. Morphine-3  $\beta$ -D-glucuronide (5 g/mL)



**Morphine**



**Morphine-3β-D-glucuronide**



**6-acetylmorphine**

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## 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 <sub>2</sub> O with 10 mM NH <sub>4</sub> COOH and 0.125% HCOOH, pH 3
Mobile Phase B:	90/10 MeCN/H <sub>2</sub> O with 10 mM NH <sub>4</sub> COOH and

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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<sub>2</sub>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+

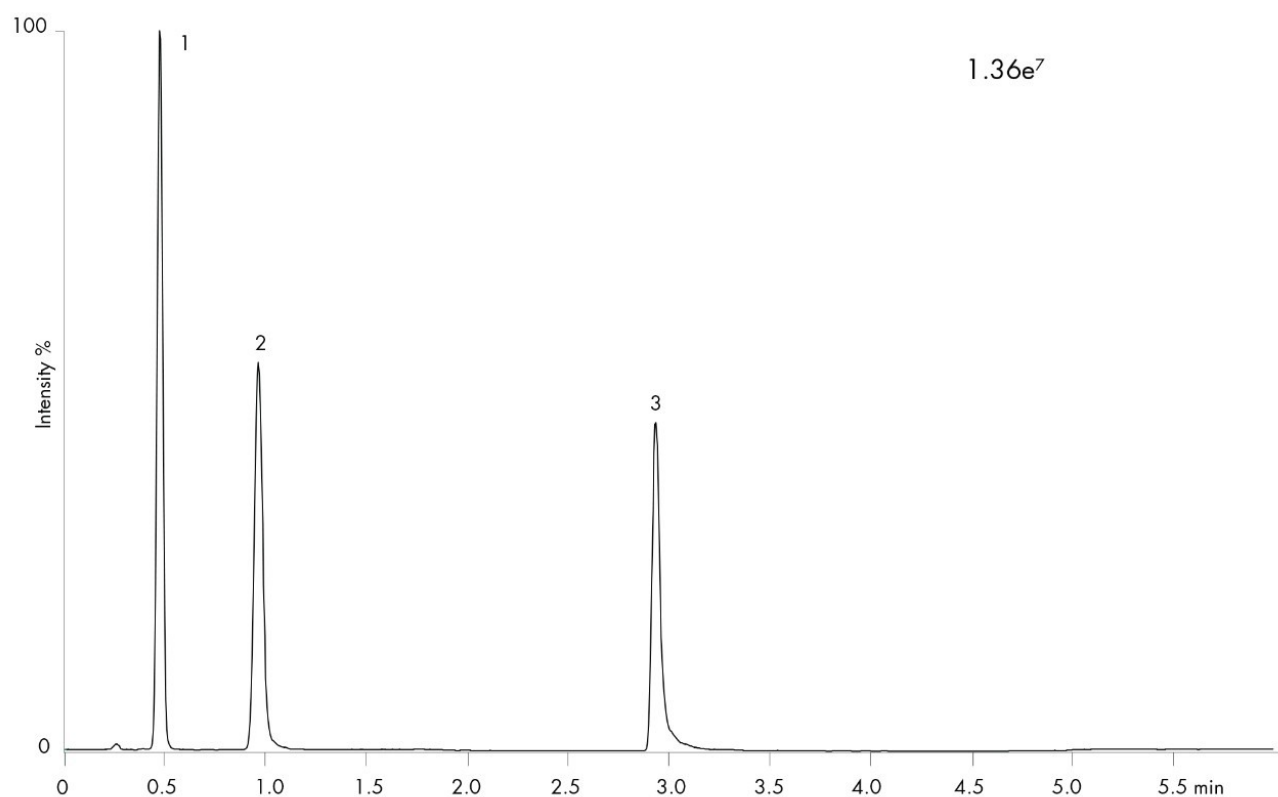
Capillary: 3.0 KV

Cone: 30 V (6-Acetyl morphine and Morphine),  
40 V (Morphine-3β-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 $\beta$ -D-glucuronide)
Dwell Time:	0.1 s

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## Results and Discussion



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## Featured Products

SQ Detector 2 <<https://www.waters.com/134631584>>

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