

Gradient Separation of Morphine and Metabolites on Atlantis HILIC Silica

Waters Corporation

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

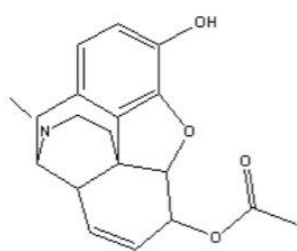
Abstract

This application brief demonstrates the gradient separation of morphine and its metabolites on Atlantis HILIC Silica column.

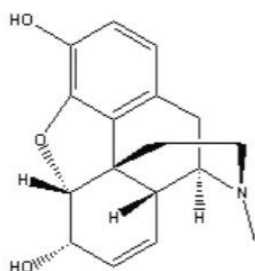
Introduction

The compounds used in this study are-

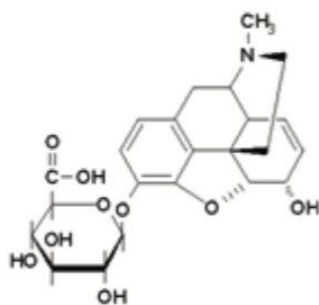
1. 6-Acetylmorphine
2. Morphine
3. Morphine-3 β -D-glucuronide



6-Acetylmorphine



Morphine



Morphine-3β-D-glucuronide

Figure 1. Structures of the compounds used in this study.

Experimental

Test Conditions

| | |
|-----------------|--|
| Column: | Atlantis HILIC Silica, 2.1 x 50 mm, 3 μm |
| Part Number: | 186002011 |
| Mobile Phase A: | 10 mM NH ₄ COOH in H ₂ O, 0.125% HCOOH in 50:50 ACN:H ₂ O |

| | |
|-----------------------|--|
| Mobile Phase B: | 10 mM NH ₄ COOH in H ₂ O, 0.125% HCOOH in 90:10 ACN:H ₂ O |
| Flow Rate: | 0.6 mL/min |
| Injection Volume: | 5 µL |
| Sample Concentration: | 25 µg/mL each |
| Sample Diluent: | 75:25 ACN:MeOH with 0.2% HCOOH |
| Column Temperature: | 30 °C |
| Detection: | UV @ 280 nm |
| Sampling Rate: | 20 points/sec |
| Time Constant: | 0.1 |
| Instrument: | Waters ACQUITY UPLC with ACQUITY PDA |

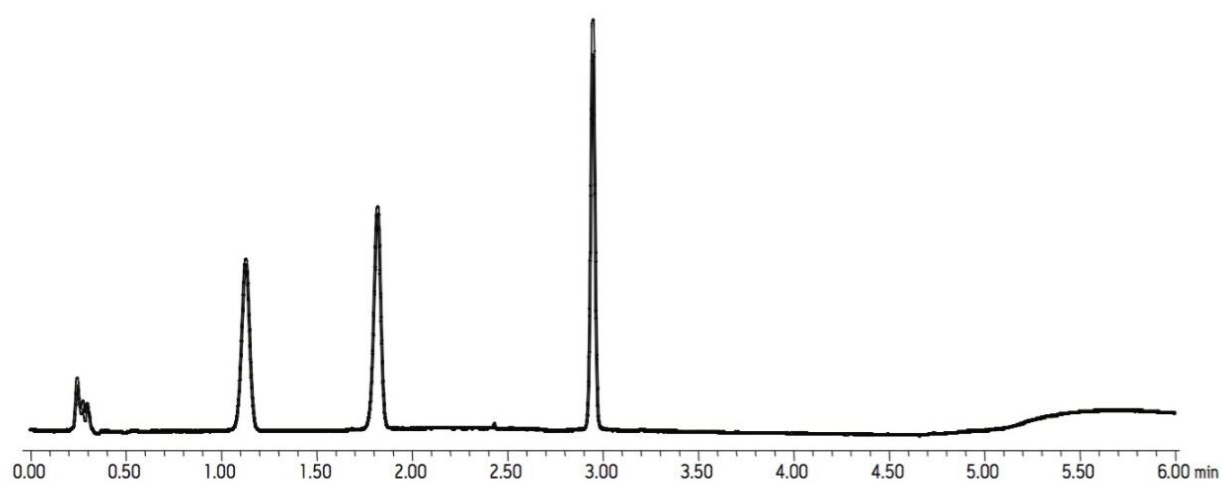
Gradient:

| Time(min) | Profile |
|-----------|---------|
| | %A |
| 0.00 | 0.1 |
| 1.05 | 0.1 |
| 4.35 | 99.9 |
| 4.50 | 0.1 |

Time(min) Profile

6.00 0.1

Results and Discussion



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ACQUITY UPLC PDA Detector <<https://www.waters.com/514225>>

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