

## Morphine and Its Glucuronide Metabolites in Serum

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Waters Corporation



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

### Abstract

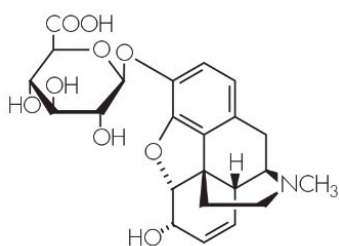
This application brief demonstrates analysis of morphine and its glucuronide metabolites in serum.

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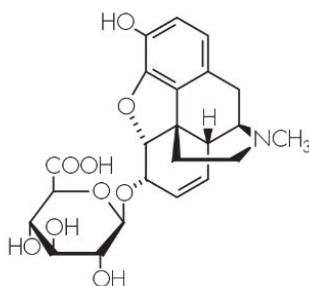
## Introduction

The compounds used in this study are -

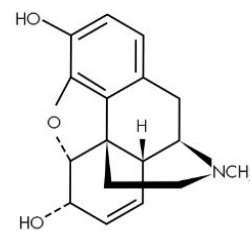
1. Morphine-D3-glucuronide
2. Morphine-D6-glucuronide
3. Morphine



**1. Morphine-D3-glucuronide**



**2. Morphine-D6-glucuronide**



**3. Morphine**

## Experimental

### HPLC Method

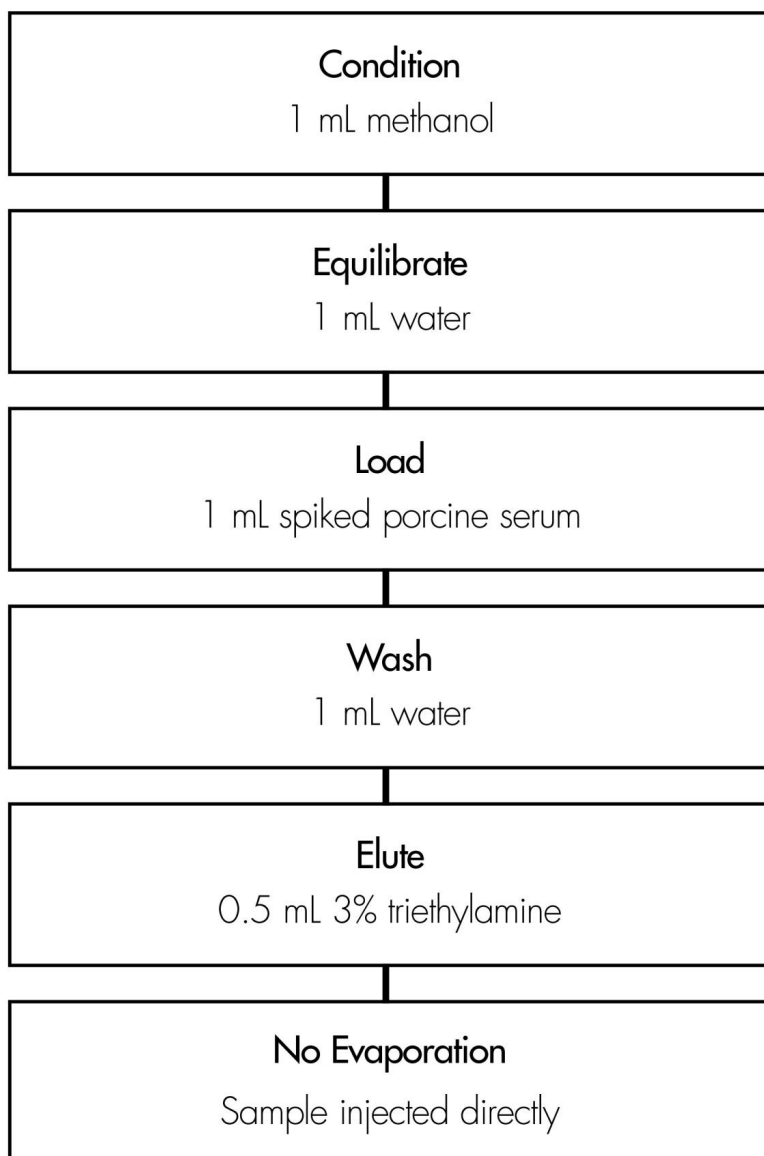
|                   |  |
|-------------------|--|
| Column:           | Symmetry Shield RP <sub>8</sub> , 3.9 x 150 mm, 5 μm |
| Part number:      | WAT200655  |
| Mobile phase:     | 20 mM potassium phosphate, pH 6.4                    |
| Flow rate:        | 1.0 mL/min   |
| Injection volume: | 100 μL of porcine serum extract                      |

Detection:

Fluorescence; ex 280 nm, em 355 nm

## Oasis® HLB Extraction Method

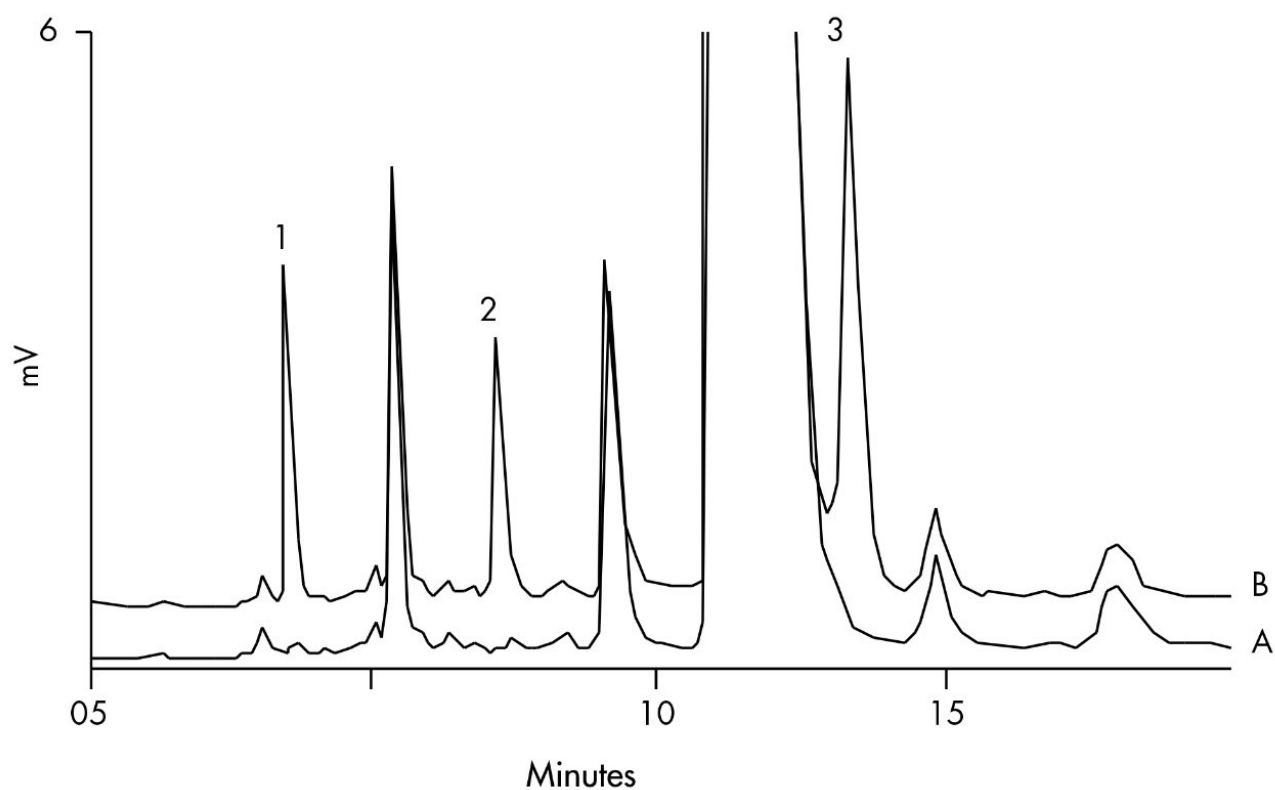
Oasis® HLB 1 cc/30 mg Extraction Cartridge  
Part Number WAT094225



## Results and Discussion

| Compound                | Concentration<br>$\mu\text{g/mL}$ | % Recovery | %RSD<br>(n=6) |
|-------------------------|-----------------------------------|------------|---------------|
| Morphine-D3-glucuronide | 0.48                              | 90.7       | 2.0           |
|                         | 0.097                             | 100        | 3.1           |
| Morphine-D6-glucuronide | 2.4                               | 92.2       | 2.8           |
|                         | 0.49                              | 93.1       | 2.5           |
| Morphine                | 3.6                               | 102        | 3.6           |
|                         | 0.73                              | 102        | 3.2           |

### Chromatogram of Serum Extracts: A) Blank B) Spiked Sample



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WA31763.104, June 2003



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