## Waters™

Application Note

# Morphine and Its Glucuronide Metabolites in Serum

Waters Corporation



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

Abstract

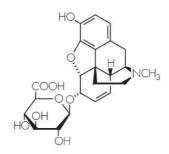
This application brief demonstrates analysis of morphine and its glucuronide metabolites in serum.

## Introduction

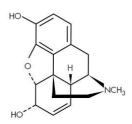
The compounds used in this sudy are -

- 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 RP8, 3.9 x 150 mm, 5  $\mu$ m

Part number: WAT200655

Mobile phase: 20 mM potassium phosphate, pH 6.4

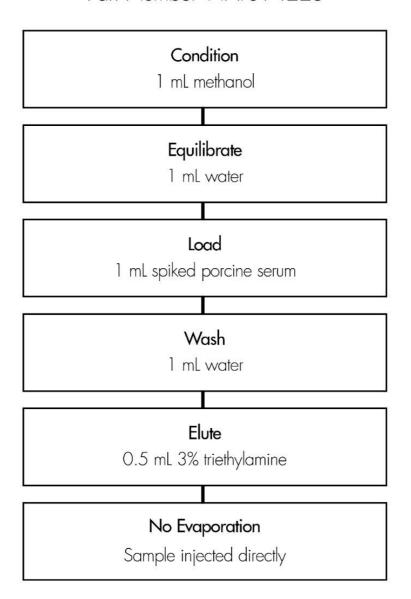
Flow rate: 1.0 mL/min

Injection volume: 100  $\mu$ L of porcine serum extract

Detection: Fluorescence; ex 280 nm, em 355 nm

## Oasis® HLB Extraction Method

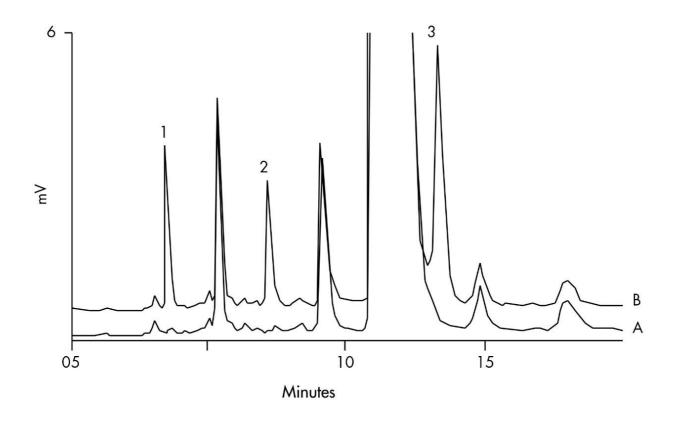
Oasis® HLB 1 cc/30 mg Extraction Cartridge Part Number WAT094225



## Results and Discussion

Compound	Concentration µg/mL	% Recovery	%RSD (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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