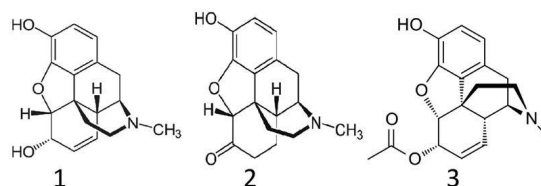
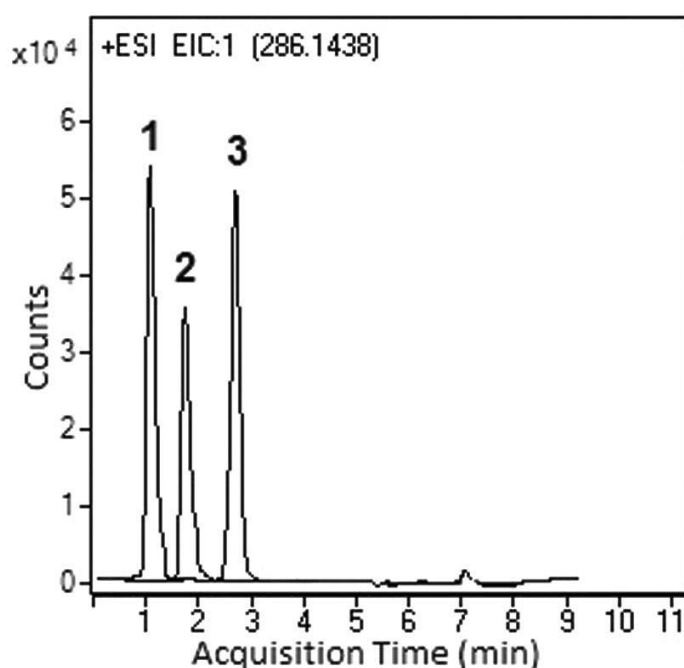


Morphine, Hydromorphone and 6-MAM in Plasma Analyzed with LCMS - AppNote

Morphine, Hydromorphone and 6-Monoacetylmorphine (6-MAM) in Plasma

This AppNote presents a Method that could be used for a routine analysis of Plasma Samples or (whole blood samples after changing the extraction procedure) for the presence of Morphine, Hydromorphone (isobaric compounds) or 6-MAM (an indicator of Heroin use).



Peaks:

1. Morphine 286.1438 m/z [M+H]⁺
2. Hydromorphone 286.1438 m/z [M+H]⁺
3. 6-Monoacetylmorphine (6-MAM) 328.1543 m/z [M+H]⁺

Method Conditions

Column: Cogent Bidentate C18 2.0™, 2.2μm, 120Å

Catalog No.: [40218-05P-2](#)

Dimensions: 2.1 x 50mm

Mobile Phase:

A: DI Water / 0.1% Formic Acid (v/v)

B: 50:50 Acetonitrile / Methanol / 0.1% Formic Acid (v/v)

Gradient:

Time (minutes)	%B
0	5
4	50
5	90

6	90
7	5

Post Time: 3 minutes

Injection vol.: 1µL

Flow rate: 0.4mL / minute

Detection: ESI – POS - Agilent 6210 MSD TOF Mass Spectrometer

Sample Preparation: To a spiked Plasma Sample (1mL), 1mL of an Ammonia solution (0.1% v/v) was added and vortex-mixed for 30 seconds to alkalize the Plasma. Then, the alkalized Plasma Sample was extracted with two 4mL Ethyl Acetate aliquots by vortex for 5 minutes, and centrifuged at 4000 rpm for 8 minutes at room temperature. The supernatant was separated and evaporated to dryness under a gentle stream of Nitrogen. The residue was reconstituted with 200µL Mobile Phase, and a 1µL aliquot of the reconstituted solution was injected into the LC– ESI-MS for analysis.

Note: Morphine is used as an analgesic drug in the treatment of the severe pain. Hydromorphone, a semi-synthetic derivative of Morphine is used in cases of Morphine-resistant Cancer-related pain and 6-Monoacetylmorphine (6-MAM) is a specific indicator for Heroin use. All three drugs remain the selected substances in monitoring of drug abuse and addiction. Heroin use remains a serious public health issue which accounts for a substantial proportion of the health costs. Analysis of Plasma Samples for the presence of the three substances is essential in assessing short or long term exposure to the drugs.



Attachment

No 310 Morphine, Hydromorphone and 6-MAM in Plasma Analyzed with LCMS pdf 0.2 Mb

[Download File](#)

Printed from the Chrom Resource Center

Copyright 2025, All Rights Apply

MicroSolv Technology Corporation

9158 Industrial Blvd. NE, Leland, NC 28451

Tel: (732) 380-8900

Fax: (910) 769-9435

Email: customers@mtc-usa.com

Website: www.mtc-usa.com