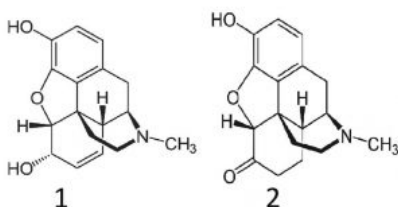
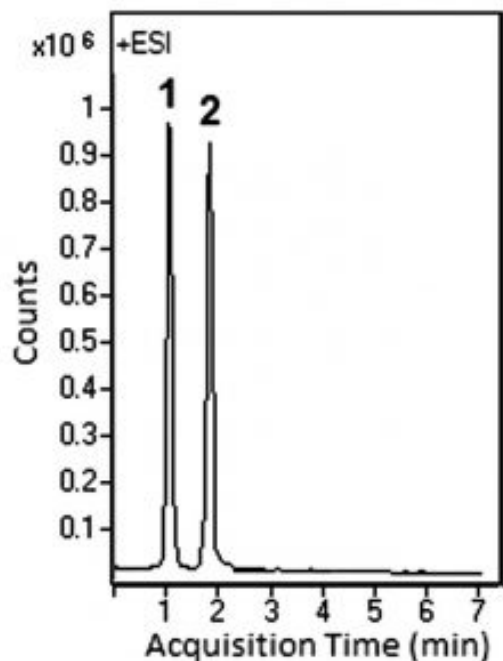


# Analysis of Isobaric Opioids by LCMS - AppNote

## Separation of Isobaric Drugs

Morphine and Hydromorphone are Isobaric Drugs (the same m/z value) that can be separated using the Cogent Bidentate C18 2.0™ Column. Multiple samples (n=5) were prepared and analyzed. The results showed great reproducibility (RSDs < 3%). The detection limits were 50 to 500 times lower than that required by immunoassays.



### Peaks:

1. Morphine 286.1438 m/z [M+H]<sup>+</sup>
2. Hydromorphone 286.1438 m/z [M+H]<sup>+</sup>

## Method Conditions

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

**Catalog No.:** 40218-05P-2

**Dimensions:** 2.1 x 50 mm

### Mobile Phase:

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

B: 50% Acetonitrile / 50% 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:** The drugs were spiked into urine at a level of 50 ng/mL. Extraction method: Spiked urine sample was loaded into SPE cartridge I (Clean Screen Xcel™, UCT Bristol, PA, USA) and eluted with 0.78 mL of Acetonitrile, 200 µL of 2-Propanol, and 20 µL of Ammonia. After the elution, the sample was dried under N<sub>2</sub> gas and dissolved in 100 µL of 50% Methanol / 50% DI Water / 0.1% Formic Acid. Before injection, the sample was filtered through a 0.45 µm Nylon Syringe Filter (MicroSolv Tech Corp.).

**Note:** Opioids have been used as pain relieving drugs but are also abused as drugs producing feelings of euphoria. They are highly addictive. Nearly three out of four drug overdoses involve pain killers, so the screening of this class of drugs in urine or plasma samples is very important.



#### Attachment

**No 312 Morphine and Hydromorphone in Urine pdf** 0.2 Mb [Download File](#)