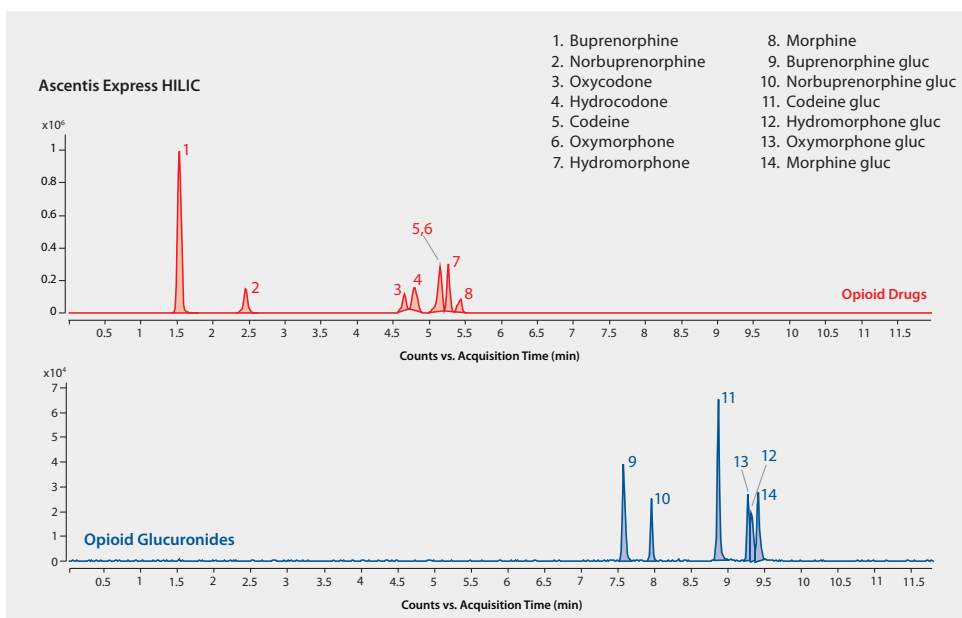


LC/MS (TOF) Analysis of Opioid Drugs and Glucuronide Metabolites in Urine on Ascentis® Express 2.7 µm HILIC after SPE using Supel™-Select HLB, β-Glucuronidase Enzyme Digestion

The glucuronide metabolites were converted back to the parent drug using β-glucuronidase, then processed using SPE prior to LC/MS analysis using HILIC mode chromatography. The Supel-Select HLB provided clean extracts and the Ascentis Express HILIC provided rapid resolution of parent drugs and metabolites. Cerilliant CRMs provided reliable quantitation.

| | |
|--------------------|---|
| market focus | Forensics and Toxicology |
| sample preparation | SPE (Solid Phase Extraction) |
| sample/matrix | urine spiked at 300 ng/mL |
| SPE well plate | Supel-Select HLB 96-well plate, 60 mg/well (575662-U) |
| condition | 1 mL methanol, 1 mL water |
| sample addition | 1.0 mL urine |
| washing | 1 mL water, 1 mL 25% methanol |
| elution | 1 mL acetonitrile |
| column | Ascentis Express HILIC, 10 cm x 2.1 mm x 2.7 µm particles (53939-U) |
| mobile phase | [A]: 5 mM ammonium formate pH 4.2 [B]: 5 mM ammonium formate (95:5 acetonitrile:water) pH 5.2 |
| gradient | 100% B for 3 min, to 80% B in 7 min, held for 2 min |
| flow rate | 0.6 mL/min |
| detector | ESI(+) TOF, m/z 100-1000 |
| injection | 3.0 µL |
| sample | 300 ng/mL |
| Application No. | G006290 |



Components

- Buprenorphine solution (Cerilliant B-044)
- Norbuprenorphine solution (Cerilliant N-059)
- Oxycodone solution (Cerilliant O-002)
- Hydrocodone solution (Cerilliant H-003)
- Codeine solution (Cerilliant C-015)
- Oxymorphone-D₃ solution (Cerilliant O-003)
- Hydromorphone solution (Cerilliant H-004)
- Morphine solution (Cerilliant M-030)
- Buprenorphine glucuronide solution (Cerilliant B-035)
- Norbuprenorphine glucuronide solution (Cerilliant N-045)
- Codeine-6-β-D-glucuronide solution (Cerilliant C-087)
- Hydromorphone-3-β-D-glucuronide (Cerilliant H-051)
- Oxymorphone-3-β-D-glucuronide solution (Cerilliant O-030)

Related Products

- analytical column**
- Ascentis® Express HILIC, 2.7 Micron HPLC Column (Supelco 53939-U)
- eluent**
- Acetonitrile (Fluka 14261)
- Ammonium formate (Fluka 14266)
- Water (Fluka 14263)
- enzyme**
- β-Glucuronidase from limpets (*Patella vulgata*) (Sigma G2174)
- SPE tube or plate**
- Supel™ - Select HLB SPE 96-well Plate (Supelco 575662-U)