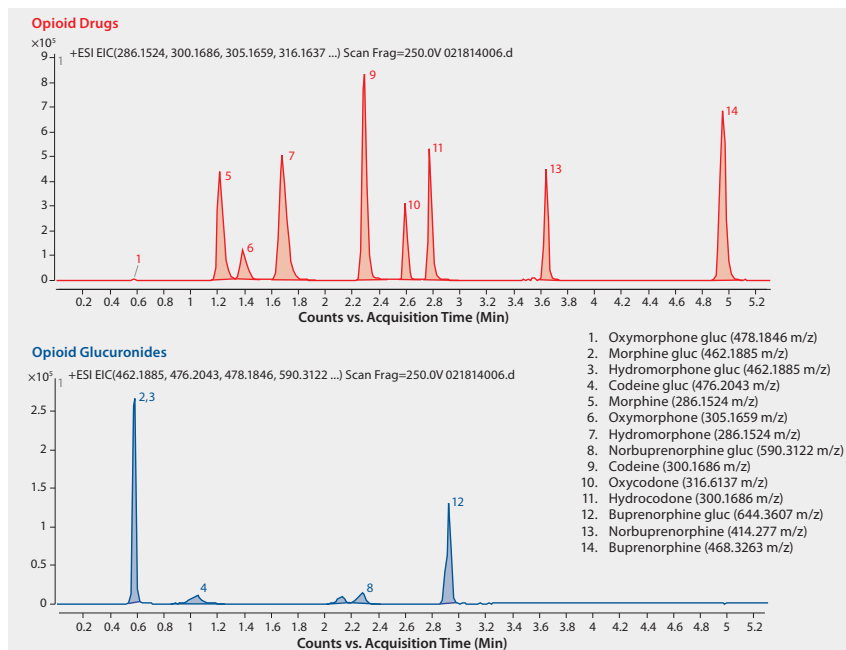


## LC/MS Analysis of Opioid Glucuronide Metabolites in Urine on Ascentis® Express 2.7 μm F5 after Solid Phase Extraction (SPE) using Supel™-Select HLB

Sample pretreatment: β-glucuronidase hydrolysis

The workflow for the LC/MS analysis of native drugs and associated metabolites from urine is shown here. The convenient liquid form of beta-glucuronidase from Sigma was used for hydrolysis of the glucuronide metabolites. SPE using Supel-Select HLB yielded clean extracts. The Ascentis Express F5 columns gave highly efficient, well-resolved peaks and rapid separation. LC-MS Ultra CHROMASOLV solvents and additives provided trouble-free operation, and Cerilliant CRMs gave reliable quantification.

market focus	Clinical; Forensics and Toxicology
sample preparation	Solid Phase Extraction
sample/matrix	urine spiked with drugs and metabolites at 300 ng/mL
SPE well plate	Supel-Select HLB 96-well plate, 60 mg/well (575662-U)
condition	1 mL methanol followed by 1 mL water
sample addition	1 mL hydrolyzed urine
washing	1 mL water followed by 1 mL 25% methanol
elution	1 mL acetonitrile
column	Ascentis Express F5, 10 cm x 2.1 mm I.D., 2.7 μm particles (53569-U)
mobile phase	[A] 5 mM ammonium formate, pH 4.2 (adjusted with formic acid); [B] 5 mM ammonium formate in (95:5 acetonitrile:water) pH 5.2 (adjusted with formic acid)
gradient	15% B held for 1 min, to 70% B in 2 min, held at 70% B for 7 min
flow rate	0.4 mL/min
column temp.	35 °C
detector	ESI(+) TOF, full scan, m/z 100-1000
injection	3.0 μL
sample	300 ng/mL
Application No.	G006299



**Related Products**

analytical column  
Ascentis® Express F5, 2.7 Micron HPLC Column ([Supelco 53569-U](#))  
eluent  
Acetonitrile ([Sigma-Aldrich 34998](#))  
Ammonium formate ([Fluka 14266](#))  
Water ([Sigma-Aldrich 34877](#))  
SPE tube or plate  
Supel™ - Select HLB SPE 96-well Plate ([Supelco 575662-U](#))

**Related Products**

standard  
Buprenorphine solution ([Cerilliant B-044](#))  
Buprenorphine glucuronide solution ([Cerilliant B-035](#))  
Codeine solution ([Cerilliant C-015](#))  
Codeine-6-β-D-glucuronide solution ([Cerilliant C-087](#))  
Hydrocodone solution ([Cerilliant H-003](#))  
Hydromorphone solution ([Cerilliant H-004](#))  
Hydromorphone-3-β-D-glucuronide ([Cerilliant H-051](#))

**Related Products**

Morphine solution ([Cerilliant M-030](#))  
Morphine-3-β-D-glucuronide solution ([Cerilliant M-031](#))  
Norbuprenorphine solution ([Cerilliant N-059](#))  
Norbuprenorphine glucuronide solution ([Cerilliant N-045](#))  
Oxycodone solution ([Cerilliant O-002](#))  
Oxycodone-D<sub>3</sub> solution ([Cerilliant O-003](#))  
Oxycodone-3-β-D-glucuronide solution ([Cerilliant O-030](#))