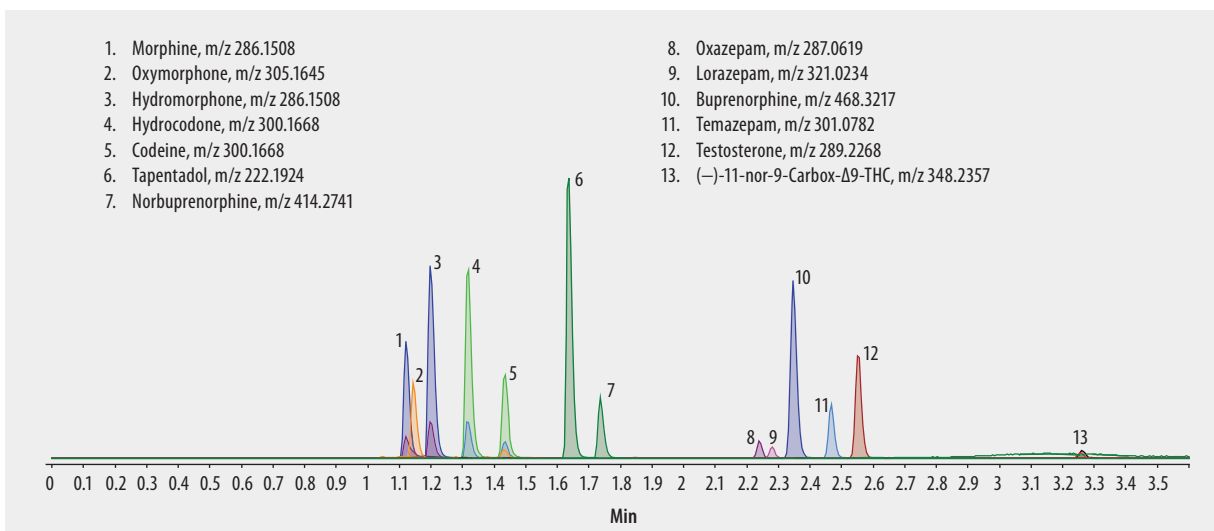


## LC/MS (TOF) Analysis of Drugs and Their Glucuronide Metabolites on Titan™ C18 after Solid Phase Extraction (SPE) using Supel™-Select SCX, $\beta$ -Glucuronidase Enzyme Digestion

A set of compounds representing five drug classes that are routinely tested in urine were extracted from urine and analyzed using LC/MS (TOF). The entire workflow, from enzymatic digestion to hydrolyze the glucuronide metabolites to analysis using a Titan UHPLC column is presented here. Cerilliant CRMS provided reliable quantification. Sample pretreatment: urine samples were spiked at 200 ng/mL each analyte and digested with 10kU of beta-glucuronidase enzyme at 60 °C for 120 min

market focus	Clinical Research; Forensics and Toxicology
sample preparation	Solid Phase Extraction (SPE)
sample/matrix	human urine
SPE tube/cartridge	Supel-Select SCX, 60 mg/3 mL (54241-U)
condition	1 mL of 1% formic acid in acetonitrile followed by 1 mL water
sample addition	1.4 mL urine
washing	2 mL water followed by 1 mL of water:methanol (75:25)
elution	1 mL of 10% ammonium hydroxide in methanol
eluate post-treatment	evaporate to dryness and reconstitute in 1 mL water
column	Titan C18, 5 cm x 2.1 mm I.D., 1.9 $\mu$ m particles (577122-u)
mobile phase	[A] 5 mM ammonium formate; [B] 5 mM ammonium formate in acetonitrile:water (95:5)
gradient	5 to 90% B in 2.5 min, held for 0.5 min, to 5% B in 0.1 min, held for 0.5 min
flow rate	0.3 mL/min
column temp.	35 °C
detector	ESI(+) TOF, m/z 100-1000
injection	2.0 $\mu$ L
Application No.	G006372



### Related Products

#### analytical column

Titan™ C18 UHPLC Column, 1.9 micron ([Supelco 577122-U](#))

#### eluent

Acetonitrile ([Fluka 14261](#))

Ammonium formate ([Fluka 14266](#))

Water ([Fluka 14263](#))

#### enzyme

$\beta$ -Glucuronidase from limpets (*Patella vulgata*) ([Sigma G2174](#))

#### SPE tube or plate

Supel™-Select SCX SPE Tube ([Supelco 54241-U](#))

### Related Products

#### standard

Buprenorphine solution ([Cerilliant B-044](#))

(-)-11-nor-9-Carboxy- $\Delta^9$ -THC solution ([Cerilliant T-019](#))

Codeine solution ([Cerilliant C-006](#))

Hydrocodone solution ([Cerilliant H-003](#))

Hydromorphone solution ([Cerilliant H-004](#))

Lorazepam solution ([Cerilliant L-901](#))

Morphine solution ([Cerilliant M-005](#))

Norbuprenorphine solution ([Cerilliant N-059](#))

Oxazepam solution ([Cerilliant O-902](#))

Oxymorphone solution ([Cerilliant O-004](#))

Tapentadol hydrochloride solution ([Cerilliant T-058](#))

Temazepam solution ([Cerilliant T-907](#))

Testosterone solution ([Cerilliant T-037](#))