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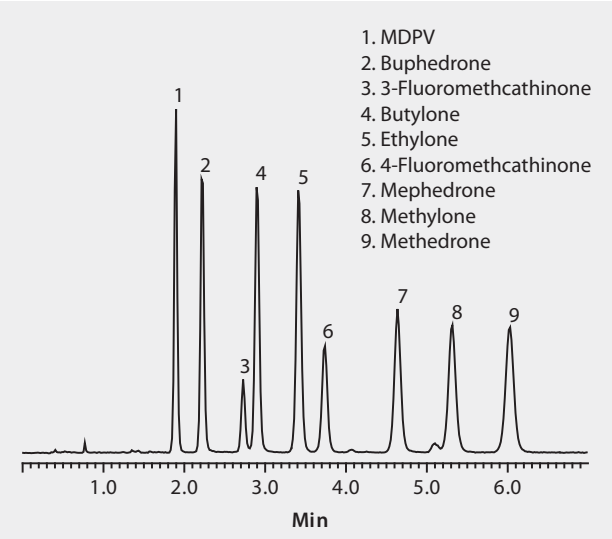
LC/MS (TOF) Analysis of Illicit Bath Salts in Urine on Ascentis® Express 2.7 µm HILIC after Solid Phase Extraction (SPE) using Supel™-Select SCX

Bath salts are psychoactive designer drugs of the phenethylamine and cathinone families. Shown here is the rapid, sensitive LC/TOF-MS analysis of nine bath salts extracted from human urine using polymeric SPE on Supel-Select SCX and separated on an Ascentis Express HILIC column. Notice the lack of interfering peaks in the chromatogram demonstrating the effectiveness of the sample cleanup. Cerilliant CRMs were used to ensure reliable MS identification and quantification.

market focus	Forensics and Toxicology
sample/matrix	urine samples spiked at 100 ng/mL with each target analyte (To ensure full ionization of the analytes, spiked samples were treated with formic acid to a final concentration of 0.1% formic acid.)
SPE tube/cartridge	Supel-Select SCX, 30 mg/1 mL (54240-U)
condition	1 mL 1% formic acid acetonitrile then 1 mL water
sample addition	1 mL spiked water blank or urine
washing	1 mL water, 1 mL 1% formic acid acetonitrile, 1 mL water
elution	2 mL 10% ammonium hydroxide in acetonitrile
eluate post-treatment	thoroughly mix via vortex agitation, evaporate 1 mL aliquot to dryness, reconstitute in 100 µL water:methanol
column	Ascentis Express HILIC, 10 cm x 2.1 mm I.D., 2.7 µm particles (53939-U)
mobile phase	(A) 5 mM ammonium formate acetonitrile; (B) 5 mM ammonium formate water; (98:2, A:B); premixed
flow rate	0.6 mL/min
pressure	1842 psi (127 bar)
column temp.	35 °C
detector	MS, ESI(+), TIC, m/z 100-1000
injection	1 µL
sample	200 µg/L ea. in acetonitrile
Application No.	G005796



Components	Related Products	Related Products
3,4-Methylenedioxypyrovalerone HCl (MDPV) solution (Cerilliant M-146)	**accessory**	**SPE tube or plate**
Buphedrone hydrochloride solution (Cerilliant B-047)	Disposable Liners for Visiprep DL Manifolds (included with 57044 and 57265) (Supelco 57059)	Supel™-Select SCX SPE Tube (Supelco 54240-U)
3-Fluoromethcathinone hydrochloride solution (Cerilliant F-016)	Visiprep™ SPE Vacuum Manifold (Supelco 57265)	**standard**
Butylone hydrochloride solution (Cerilliant B-045)	Visiprep™ SPE Vacuum Manifold (Supelco 57044)	Buphedrone hydrochloride solution (Cerilliant B-047)
Ethylone hydrochloride (Cerilliant E-071)	**analytical column**	Butylone hydrochloride solution (Cerilliant B-045)
4-Fluoromethcathinone hydrochloride solution (Cerilliant F-015)	Ascentis® Express HILIC, 2.7 Micron HPLC Column (Supelco 53939-U)	Ethylone hydrochloride (Cerilliant E-071)
Mephedrone hydrochloride solution (Cerilliant M-138)	**eluent**	3-Fluoromethcathinone hydrochloride solution (Cerilliant F-016)
Methylone hydrochloride (Cerilliant M-140)	Acetonitrile (Fluka 14261)	4-Fluoromethcathinone hydrochloride solution (Cerilliant F-015)
Methedrone hydrochloride solution (Cerilliant M-147)	Ammonium formate (Fluka 70221)	Mephedrone hydrochloride solution (Cerilliant M-138)
	Ammonium hydroxide solution (Fluka 09857)	Methedrone hydrochloride solution (Cerilliant M-147)
	Formic acid (Fluka 56302)	3,4-Methylenedioxypyrovalerone HCl (MDPV) solution (Cerilliant M-146)
	Water (Fluka 14263)	Methylone hydrochloride (Cerilliant M-140)