Solid Phase Extraction For Clinical & Forensic Analysis



he leader in functionalized silica

DRUG CLASS	HYDROLYSIS	SAMPLE PREPARATION	COLUMN PREPARATION	COLUMN WASH	SAMPLE ELUTION	SAMPLE CONCENTRATION	RECONSTITUTION	SUGGESTED DERIVATIZATION for GC/MS	CHEMICAL STRUCTURE AND NAME
TRICYCLIC ANTIDEPRESSANTS	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H ₂ O Acetic Acid Methanol	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Evaporate to dryness	Methanol	Acetylation for Secondary Amines	$CH-(CH_2)_2-N(CH_3)_2$ 3-(10,11-dihydro-5H-dibenzo[a,d] cycloheptene-5-ylidene)-N, N-dimethyl-1-propanamine $ \textbf{Amitriptyline} $
BARBITURATES	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H₂O Acetic Acid Hexane	Hexane / Ethyl Acetate (50:50)	Evaporate to dryness	Ethyl Acetate	Not Required	$CH_2 = CH - CH_2$ $CH_3 - (CH_2)_2 - CH$ CH_3 $CH_3 - (CH_2)_2 - CH$ CH_3
BENZODIAZEPINES	Acid Hydrolysis for Benzophenone Enzymatic with ß-glucuronidase	Adjust pH to 9.0 with borate buffer	Methanol DI H₂O borate buffer	10% MEOH in H₂O Hexane	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Evaporate to dryness	Ethyl Acetate	BSTFA with 1% TMCS	8-chloro-1methyl-6phenyl-4H-[1,2,3,]triazolo[4,3-2][1,4]benzodiazepene Alprazolam
LSD	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H₂O Acetic Acid Methanol	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Evaporate to dryness	Ethyl Acetate	BSTFA with 1% TMCS	d-lysergic acid diethylamide
MEPERIDINE	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H₂O Acetic Acid Methanol	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Evaporate to dryness	Methanol	Not Required	$\begin{array}{c} CH_3 \\ \\ N \\ \\ C_6H_5 \\ \end{array}$ $\begin{array}{c} CO-O-C_2H_5 \\ \\ \text{ethyl1-methyl-4-phenyl-piperidine-4-carboxylate} \\ \\ \textbf{Meperidine} \end{array}$
∆9 THC-COOH	 Base Hydrolysis with 10 N KOH Enzymatic Hydrolysis with ß-glucuronidase 	Adjust pH to 3.5 with glacial acetic acid	Methanol DI H₂O 0.1 N HCI	DI H ₂ O 40% Acetonitrile in 0.1 N HCI Hexane	Hexane / Ethyl Acetate (50:50)	Evaporate to dryness	Ethyl Acetate	BSTFA with 1% TMCS	COOH OH CH ₃ CH ₃ CH ₃ delta9-tetrahydrocannabinol-9-carboxylic acid THCA
COCAINE AND BENZOYLECGONINE	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H₂O 0.1 N HCI Methanol	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Evaporate to dryness	Ethyl Acetate	BSTFA with 1% TMCS	COOH H O-CO-C ₀ H ₅ 3-benzoyloxy-8-methyl-8-azabicyclo[3.2.1]octane-2-carboxylic acid Benzoylecognine
CODEINE AND MORPHINE	Acid Hydrolysis with HCI and heat 121° C Enzymatic Hydrolysis with ß-glucuronidase	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H₂O Acetate buffer Methanol	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Evaporate to dryness	Ethyl Acetate	BSTFA with 1% TMCS	N-CH ₃ H H OH OH 7,8-didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-ol Morphine
AMPHETAMINE AND METHAMPHETAMINE	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H₂O Acetic Acid Methanol	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Evaporate to dryness	Ethyl Acetate	PFPA (PFAA)	$\begin{array}{c} CH_3 \\ I \\ C_6H_5 - CH_2 - CH - NH_2 \\ \\ \text{ 1-phenyl-2-aminopropane} \\ \mathbf{Amphetamine} \end{array}$
PHENCYCLIDINE	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H₂O phosphate buffer	DI H ₂ O Acetic Acid Methanol	Methylene Chloride Isopropanol Ammonium Hydroxide (78:20:2)	Add 30 μL DMF Evaporate to 30 μL	Ethyl Acetate	Not Required	1-(1-phenylcyclohexyl)piperidine Phencylidine
GHB	Not Required	Adjust pH to 6.0 with phosphate buffer	Methanol DI H ₂ O phosphate buffer	NA	Methanol / NH₄OH (99:1)	Evaporate to dryness	Ethyl Acetate	BSTFA with 1% TMCS	HO OH gamma-hydroxybutyric acid GHB
ETHYL GLUCURONIDE	Not Required	Add 50 µL of formic acid to 1 mL urine	1% Formic Acid	DI H ₂ O Acetic Acid Methanol	1% Formic Acid / Methanol	Evaporate to dryness	MeOH	MSTFA with 1% TMCS	HOOC HO—OCH ₂ CH ₃ O H ethyl glucuronide EtG

	ION Numbers	TIC of Data: Std.D.	Full Scan MS
	lon 232 lon 217 lon 305	Amitriptyline Nortriptyline 4.0 5.0 6.0 7.0	232 44 45 117 191 305
	Ion 168 Ion 167 Ion 195	Amobarbital Secobarbital Hexobarbital(ISTD) Phenobarbital 3.5 4.0 4.5 5.0 5.5	168 167 17 195 97 124 153 195
	lon 429 lon 147 lon 313	Temazepam Oxazepam Diazepam Alprazolam	147 313 429 179 340 401 415
	lon 395 lon 293 lon 268	LSD 5.80 6.00 6.40	253. 253. 293. 279. 288. 337.
	lon 71 lon 172 lon 247	Meperidine 2.80 3.20	71 42 57 103 172 218
	Ion 371 Ion 473 Ion 488	THCA 5.20 5.6	371 77 473 488 147 208 297
	lon 240 lon 256 lon 361	Cocaine Benzoylecgonine	105 240 105 361 256 9 9
_	lon 429 lon 287 lon 324	Codeine Morphine Codeine 3.5 4.0	73 236 414 44 146 287 324
	lon 204 lon 118 lon 160	Methamphetamine Amphetamine	118 ¹⁶⁰
	lon 200 lon 91 lon 242	Phencyclidine	91 166 55
	lon 233 lon 234 lon 235	GHB-D6 GHB 5.00 5.20 5.40 5.60 5.80 6.00 6.20 6.40 6.60	147 117 117 157 157 158 159 159 159 159 159 159 159 159 159 159
	lon 160 lon 261 lon 405	4.00 \$.00 6.00 7.00 8.00 9.00 10.00	449 107 207 292 292 293 293 293 293 293 293









