

Available immunochemistry, GC/MS as well as LC/MS assays

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(a) Drug monitoring

Parameter	Sample type
Immunological tests	
Addictive drugs (amphetamines, benzodiazepines, buprenorphine, cannabinoids, cocaine, ethanol, LSD, methadone/EDDP, opiates)	Urine (≥ 0.5 ml)
Addictive drugs (amphetamines, benzodiazepines, cannabinoids, cocaine, methadone, opiates)	Plasma (≥ 0.5 ml)
Ethyl glucuronide	Urine (≥ 0.5 ml)
Gas chromatography	
Benzodiazepines (bromazepam, diazepam, flunitrazepam, lorazepam, midazolam, nordiazepam, oxazepam)	Plasma, blood (≥ 1.0 ml)
Ethanol	Plasma, blood, urine (≥ 0.5 ml)
Illicit drugs (amphetamine, methamphetamine, MDA, MDMA, MDE, cocaine, heroine, morphine, THC)	Powder (≥ 200 mg)
Gas chromatography-mass spectrometry (GC-MS)	
General unknown screening for the identification of pharmacologically active compounds (e.g. drugs, pharmaceuticals, organic poisons, pesticides, pollutants and metabolites)	Powder (≥ 1 mg), plasma, blood (≥ 2 ml), urine (≥ 10 ml)
Opioides (morphine, monoacetylmorphine, codeine, dihydrocodeine, methadone, EDDP, buprenorphine)	Plasma, blood (≥ 1 ml), urine (≥ 2 ml)
Cannabinoides (THC, 11-OH-THC, THC-COOH)	Plasma, blood, urine (≥ 1 ml)
Cocain and metabolites (cocaine, benzoylecgonine, methylecgonine,	fluoride stabilized plasma

ethylecgonine, cocaethylene)	or blood (1 ml)
Amphetamines (amphetamine, methamphetamine, MDA, MDMA, MDE)	Plasma, blood (≥ 1 ml)
γ -Hydroxybutyric acid (GHB)	Plasma, blood, urine (≥ 1 ml)

Liquid chromatography-mass spectrometry (LC-MS)

General unknown screening for the identification of pharmacologically active compounds (e.g. drugs, pharmaceuticals, organic poisons, pesticides, pollutants and metabolites)	Powder (≥ 1 mg), plasma, blood (≥ 2 ml), urine (≥ 10 ml)
Benzodiazepines (flunitrazepam, oxazepam, lorazepam, bromazepam, diazepam, alprazolam, 7-aminoflunitrazepam, tetrazepam, midazolam, nordazepam)	Plasma, blood (≥ 1.0 ml)
Antineoplastic drugs (sunitinib, N-desethyl sunitinib, N,N-didesethyl sunitinib; temozolomide, 5-aminoimidazole-4-carboxamide, 3-methyl(triazenyl)imidazole-4-carboxamide)	Plasma, blood (≥ 0.5 ml)
Calcium channel blocker (isradipine)	Plasma, blood (≥ 0.1 ml)
Aromatase inhibitors (letrozole, anastrozole)	Plasma, blood (≥ 1.0 ml)
Estrogenrezeptor antagonist (tamoxifen)	Plasma, blood (≥ 1.0 ml)

(b) Metabolomics

Parameter	Sample type
Enzymatic tests	
Glucose and lactate	Urine, plasma, cell lysates (≥ 0.5 ml)
Mass spectrometry (MS)	
Biocrates AbsoluteIDQ p150 Kit: quantitation of 41 acylcarnitines, 14 amino acids, sum of hexoses, 92 phospho- and 15 sphingolipids	Urine, plasma, cell lysates (≥ 0.1 ml)
Liquid chromatography-mass spectrometry (LC-MS)	
Biocrates Bile Acids Kit (16 human bile acids)	Plasma (≥ 0.1 ml)
Glycolytic intermediates and tricarboxylic acid intermediates	Cell lysates
Kynurenine pathway (tryptophan, kynurenine, kynurenic acid, quinolinic acid)	Plasma, blood (≥ 0.05 ml)

(c) Pharmacogenetic genotyping

Gene	Function
Drug metabolizing enzymes	
CYP2D6	Cytochrome P450 2D6
CYP2C19	Cytochrome P450 2C19
UGT2B7	UDP-Glycosyltransferase 2B7
UGT1A1	UDP-Glycosyltransferase 1A1
UGT1A3	UDP-Glycosyltransferase 1A3
COMT	Catechol-O-methyltransferase
DPYD	Dihydropyrimidine dehydrogenase
Drug receptors	
OPRM1	Opioid receptor, mu-1
OPRD1	Opioid receptor, delta-1
OPRK1	Opioid receptor, kappa-1
Drug transporters	
ABCB1	ATP-binding cassette B1
SLCO1B1	Solute carrier organic anion transporter family, 1B1
SCLO1A2	Solute carrier organic anion transporter family, 1A2
Other	
DRD2	Dopamine receptor D2
STAT6	Signal transducer and activator of transcription 6
MC1R	Melanocortin 1 receptor
GAL	Galanin
