Drugs Detected by Liquid Chromatography-High Resolution Mass Spectrometry

6-Jun-22 Drug Metabolite or Preparation Ingredient	Assay Limit of Detection (LOD) (ng/mL)	Assay Interpretation Notes	*Detection Time in Urine
Anesthetic			
Ketamine	10	Ketamine detected after use	3 d
Anticonvulsant and Analgesic			
Gabapentin	1	Gabapentin detected after use	4 d
Pregabalin	100	Pregabalin detected after use	4 d
Antidepressants			
Bupropion	1	Bupropion detected after use	
m-CPP	10	Major metabolite of trazodone, nefazodone, mepiprazole and abilify; designer drug; *Ecstasy*	
Antipsychotics			
Clozapine	10	Metabolized to norclozapine; both may be detected after use	6d
Norclozapine	10	Clozapine metabolite	
Olanzapine	10	Olanzapine detected after use	4d
Quetiapine	1	Quetiapine detected after use	4d
Benzodiazepines - Short Acting			1-2 d
Triazolam	10	Triazolam detected after use	
Flurazepam	100	Metabolized to desalkylflurazepam; metabolite primarily detected after use	
Desalkylflurazepam	10	Flurazepam metabolite	
Benzodiazepines - Intermediate Acting			1 - 12.5 d
Clonazepam	10	Metabolized to 7-aminoclonazepam; metabolite primarily detected after use	
7-Aminoclonazepam	10	Clonazepam metabolite	
Lorazepam	10	Lorazepam detected after use	
Temazepam	10	Metabolized to oxazepam; both may be detect after use; diazepam metabolite	
Alprazolam	10	Metabolized to alpha-hydroxyalprazolam; both may be detected after use	
Hydroxyalprazolam	100	Alprazolam metabolite	
Flunitrazepam	1	Metabolized to 7-aminoflunitrazepam; metabolite primarily detected after use	
7-Aminoflunitrazepam	1	Flunitrazepam metabolite	
Oxazepam	10	Oxazepam detected after use; nordiazepam and temazepam metabolite	
Benzodiazepines - Long Acting			30 d
Diazepam	10	Metabolized to nordiazepam, temazepam and oxazepam; all may be detected after use	2 - 21 d
Nordiazepam	10	Diazepam metabolite	6-24 d
Nitrazepam	10	Metabolized to 7-aminonitrazepam; both may be detected after use	
7-Aminonitrazepam	10	Nitrazepam metabolite	
Phenazepam	1	Phenazepam detected after use	
Cannabinoids			
THC-COOH (THCA)	1000	Major cannabinoid metabolite	3-4 d (single use); 1-5 d (regular use); 10-60 d (chronic use)
THC-COO-Glucuronide	100	Major cannabinoid metabolite conjugate	
THC	1000	Primary psychoactive component of marijuana. Poorly detected in urine.	1-3 d (casual use); 30-36 d (chronic use)
Opioids and Related Drug Preparation Ingredients			
Buprenorphine	10	Metabolized to norbuprenorphine; both may be detected after use; Suboxone and Buprenorphine/Naloxone preparations also include naloxone	4-7 d
Buprenorphine-glucuronide	25	Buprenorphine metabolite	
Norbuprenorphine	1	Buprenorphine metabolite	7 d
Norbuprenorphine-glucuronide	25	Norbuprenorphine metabolite	
Codeine	10	Metabolized to norcodeine, morphine and hydrocodone; all may be detected after use	1-4 d
Norcodeine	10	Codeine metabolite	
Fentanyl	10	Metabolized to norfentanyl; both may be detected after use	1-3 d
Norfentanyl	1	Fentanyl metabolite	
Heroin (seen as metabolite below)		Metabolized to 6-acetylmorphine, metabolite primarily detected after use	
6-Acetylmorphine	10	Heroin metabolite	1-3 d
Hydrocodone	10	Metabolized to norhydrocodone, dihydrocodeine and hydromorphone; all may be detected after use; codeine metabolite	1-3 d
Norhydrocodone	10	Hydrocodone metabolite	
Dihydrocodeine	1	Hydrocodone metabolite	

Hydromorphone	10	Hydromorphone detected after use; hydrocodone and morphine metabolite	
Morphine	1	Metabolized to hydromorphone; both may be detect after use; 6AM and codeine metabolite	1-5 d
Naloxone	10	Naloxone detected after use	
Naltrexone	10	Naltrexone detected after use; opioid antagonist	
Meperidine	1	Metabolized to normeperidine; both may be detected after use	
Normeperidine	1	Meperidine metabolite	
Methadone	10	Metabolized to EDDP; both may be detected after use	2-7 d
EDDP	10	Methadone metabolite	7 d
Oxycodone	1	Metabolized to noroxycodone; both may be detected after use; Targin preparations also included naloxone (oxycodone with naloxone controlled release). Oxycontin, with acetaminophen; Percocent, with aspirin; Percodan, with ibuprofen.	1-4 d
Noroxycodone	10	Oxycodone metabolite	
SSRI			
Citalopram	1	Citalopram detected after use	
Paroxetine	10	Paroxetine detected after use	
Venlafaxine	10	Venlafaxine detected after use	
O-desmethylvenlafaxine	10	O-desmethylvenlafaxine detected after use	
Stimulants and Related Drug Preparation Ingredients			
Methamphetamine	10	Metabolized to amphetamine; both may be detected after use	1-2 d (infrequent use); 7-10 d (prolonged use)
Amphetamine	100	Amphetamine detected after use; methamphetamine metabolite	1-2 d (infrequent use); 7-10 d (prolonged use)
MDEA	10	Metabolized to MDA; both may be detected after use	
MDMA	10	Metabolized to MDA; both may be detected after use; *Ecstasy*	2 d
MDA	10	MDEA and MDMA metabolite	
Cocaine	10	Metabolized to benzoylecgonine, norcocaine and cocaethylene; all may be detected after use; cocaine is often cut with levamisole which may also be detected after use	24 hours
Benzoylecgonine	10	Major cocaine metabolite	1-3 d (infrequent use); 12 d (chronic use)
Norcocaine	1	Cocaine metabolite	
Cocaethylene	1	Cocaine metabolite formed when cocaine is used with alcohol	
Levamisole	1	Cutting agent mixed with cocaine	
Benzylpiperazine	1	Synthetic stimulant; designer drug; *Ecstasy*	
MDPV	1	Synthetic amphetamine; designer drug sometimes referred to as a “bath salt”	
Mephedrone	10	Synthetic amphetamine; designer drug sometimes referred to as a “bath salt”	
Methylphenidate	1	Metabolized to ritalinic acid; both may be detected after use. Is a phenethylamine derivative used in the treatment of depression narcolepsy and attention defecit disorder.	
Ritalinic acid	10	Methylphenidate metabolite	
Diphenhydramine	1	Diphenhydramine detected after use	
Ephedrine/Pseudoephedrine	10	Ephedrine/Pseudoephedrine detected after use	
Cotinine	100	Nicotine metabolite	
Other			
Mitragynine; *Kratom*	1	Mitragynine detected after use	
7-Hydroxymitragynine	10	Mitragynine metabolite	
Phenibut	100	Phenibut detected after use	
Zopiclone	2.5	Zopiclone detected after use; Z-drug	
Acronyms			
EDDP, 2-ethylidene-1,5-dimethyl-2,2-diphenylpyrrolidine			
mCPP, 1-(3-chlorophenyl)piperazine			
MDA, methylenedioxyamphetamine			
MDEA, methylenedioxyethylamphetamine			
MDMA, methylenedioxymethamphetamine			
MDPV, 3,4-methylenedioxypyrovalerone			
THCA, 11-nor-9-carboxy-Δ9-tetrahydrocannabinol			
* Detection window varies with dose, acute/chronic use, individual metabolism, liver or kidney disease or disorders and urine concentration.			
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