

Montana Forensic Science Division

Basic Drug Screen Drugs: Full Scan GC/MS/NPD		LC/MS/MS
Drug:	Description / Comments:	Limit of Quantitation
Alprazolam	Benzodiazapine; anxiolytic	20 ng/mL
Amitriptyline	Tricyclic antidepressant	20 ng/mL
Amphetamine	CNS Stimulant; anorectic; drug of abuse	20 ng/mL
Atropine	Anticholinergic; alkaloid in 'Deadly Nightshade'; parasympatholytic	*
Bupivacaine	Long acting local anesthetic	*
Bupropion	Antidepressant; unstable	20 ng/mL
Bupropion metabolite	Bupropion metabolite (approx. 3 similar metabolites)	*
Caffeine	Mild CNS Stimulant	*
Chlordiazepoxide	Tranquilizer; metabolizes to nordiazepam	20 ng/mL
Chlorpheniramine	Antihistamine	20 ng/mL
Chlorpromazine	Antipsychotic	*
Citalopram	SSRI - Antidepressant	20 ng/mL
Clonazepam	Benzodiazepine; Anticonvulsant, anxiolytic	20 ng/mL
Clozapine	Antipsychotic	*
Cocaeethylene	Active drug formed in the body after / during alcohol and cocaine use	20 ng/mL
Cocaine	CNS Stimulant; drug of abuse; local anesthetic	20 ng/mL
Codeine	Narcotic analgesic	20 ng/mL
Cotinine	Nicotine metabolite	*
Cyclobenzaprine	Muscle relaxant (Flexeril)	20 ng/mL
Desipramine	Active antidepressant and metabolite of Imipramine	*
Dextromethorphan	Antitussive; Analog of codeine	20 ng/mL
Diazepam	Benzodiazapine; anxiolytic; muscle relaxant; anticonvulsant	20 ng/mL
Diltiazem	Double peaks - Calcium channel blocker for angina treatment, HTN	*
Diphenhydramine	Antihistamine	20 ng/mL
Doxepin	Tricyclic antidepressant	*
Doxylamine	Antihistamine	20 ng/mL
Ecgonine methyl ester	Cocaine metabolite	*
EDDP	Methadone metabolite	*
Ephedrine	Mild CNS Stimulant; nasal decongestant; bronchodilator	*
Fentanyl	Narcotic analgesic	0.5 ng/mL
Fluoxetine	SSRI - Antidepressant	20 ng/mL
Flurazepam	Benzodiazepine; hypnotic	*
Hydrocodone	Narcotic analgesic	20 ng/mL
Hydroxyzine	Antihistamine	20 ng/mL
Imipramine	Tricyclic antidepressant	*
Ketamine	Dissociative anesthetic; anesthetic induction; drug of abuse	20 ng/mL
Lamotrigine	Anticonvulsant / antipsychotic	20 ng/mL
Levorphanol	Dextromethorphan metabolite; Opiate substitute	*
Lidocaine	Local anesthetic	*
MDA	Designer amphetamine; psychotropic amphetamine	20 ng/mL
MDEA	Designer amphetamine; psychotropic amphetamine	*
MDMA	Designer amphetamine; psychotropic amphetamine	20 ng/mL
Meperidine	Narcotic analgesic	20 ng/mL
Metaxalone	Muscle relaxant	*

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Methadone	Analgesic; morphine substitute	20 ng/mL
Methamphetamine	CNS Stimulant; anorectic; drug of abuse; nasal decongestant	20 ng/mL
Methaqualone	Sedative; hypnotic	*
Methcathinone	CNS Stimulant; related to cathinone (Khat)	*
Methylphenidate	Treats depression and narcolepsy; drug of abuse	*
Metoclopramide	Treats gastroesophageal reflux; treats nausea (chemotherapy)	*
Metoprolol	Antihypertensive	*
Midazolam	Benzodiazepine; pre-operative sedative/ hypnotic; induction	20 ng/mL
Mirtazapine	Tetracyclic antidepressant	20 ng/mL
Nicotine	Recreational drug; mild CNS stimulant; (tobacco)	*
Nor-clozapine	Clozapine metabolite	*
Nor-diazepam	Diazepam metabolite	*
Nor-doaxepin	Doaxepin metabolite	*
Nor-fluoxetine	Fluoxetine metabolite	20 ng/mL
Nor-meperidine	Meperidine metabolite	*
Nor-promethazine	Promethazine metabolite	*
Nor-propoxyphene	PPX metabolite; (3 breakdown peaks)	*
Nor-sertraline	Sertraline metabolite	*
Nortriptyline	Active antidepressant and metabolite of Amitriptyline	20 ng/mL
Nor-venlafaxine	Antidepressant	*
Nor-verapamil	Verapamil metabolite	*
Olanzapine	Antipsychotic (Xyprexa)	20 ng/mL
Oxcarbazepine	Anticonvulsant (Epilepsy)	*
Oxycodone	Narcotic analgesic	20 ng/mL
Paroxetine	SSRI - Antidepressant	20 ng/mL
Phencyclidine (PCP)	Dissociative anesthetic; veterinary tranquilizer; drug of abuse	*
Pheniramine	Antihistamine	*
Phentermine	Anorectic agent; mild CNS stimulant	20 ng/mL
Phenylpropanolamine	Anorectic agent; mild CNS stimulant	*
PMA	Designer amphetamine; MDMA adulterant	*
Procaine	Local anesthetic; cocaine adulterant	*
Promethazine	Antihistamine; antiemetic; sedative	20 ng/mL
Propofol	Short-acting IV hypnotic; induction; also veterinary sedative	*
Propoxyphene	Mild narcotic analgesic (PPX)	*
Pseudoephedrine	Nasal decongestant; bronchodilator	*
Quetiapine	Antipsychotic; neuroleptic	20 ng/mL
Quinidine	Antiarrhythmic agent	*
Quinine	Anti-malarial agent; adulterant in heroin	*
Scopolamine	Antimuscarinic; CNS depressant; treats motion sickness	*
Sertraline	SSRI - Antidepressant	20 ng/mL
Strychnine	CNS Stimulant/ convulsant	*
Temazepam	Benzodiazepine; hypnotic	20 ng/mL
Tramadol	Narcotic analgesic	20 ng/mL
Tramadol (N-desmethyl)	Tramadol metabolite	*
Tramadol (O-desmethyl)	Tramadol metabolite	*

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Drug:	Description / Comments:	Limit of Quantitation
Trazodone	Antidepressant	20 ng/mL
Triazolam	Benzodiazepine; hypnotic	*
Trimipramine	Tricyclic antidepressant	*
Venlafaxine	Antidepressant	20 ng/mL
Verapamil	Anti-angina; anti-HTN	*
Zolpidem	Hypnotic; sleep aid	20 ng/mL
* = Drug currently not quantitated		
Notes: This is not an exhaustive list, there could be drugs found in this assay that are not listed.		
Notes: Detection of all drugs are extraction specific and can vary from experiment to experiment.		
Acid/Neutral Drug Screen: Full Scan GC/MS		GC/MS
Drug:	Description / Comments:	Limit of Quantitation
Acetaminophen	Pain Relief	*
Butalbital	Barbiturate; CNS Depressant	2 mg/L
Carbamazepine	Anti-seizure	*
Carisoprodol	Muscle Relaxant	2 mg/L
Haloperidol	Antipsychotic	*
Ibuprofen	Pain Relief	*
Levetiracetam	Anti-seizure	*
Meprobamate	Muscle Relaxant	2 mg/L
Pentobarbital	Barbiturate; CNS Depressant	*
Phenobarbital	Barbiturate; CNS Depressant	2 mg/L
Phenytoin	Anti-seizure	2 mg/L
Secobarbital	Barbiturate; CNS Depressant	*
Valproic Acid	Anti-seizure	*
* = Drug currently not quantitated		
Notes: This is not an exhaustive list, there could be drugs found in this assay that are not listed.		
Notes: Detection of all drugs are extraction specific and can vary from experiment to experiment.		
URINE ELISA		
Assay	Analyte	Cutoff (ng/mL)
Amphetamine	Amphetamine	100
Barbiturates	Secobarbital	200
Benzodiazepines	Oxazepam	50
Cocaine	Benzoyllecgonine	50
Methamphetamine	Methamphetamine	100
Opiates	Morphine	100
Oxycodone	Oxycodone	200
THC	Carboxy-THC	20
Fentanyl	Fentanyl	2
Buprenorphine	Buprenorphine	2

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BLOOD ELISA		
Assay	Analyte	Cutoff (ng/mL)
Amphetamine	Amphetamine	20
Barbiturates	Secobarbital	100
Benzodiazepines	Oxazepam	20
Buprenorphine	Buprenorphine	1
Cocaine	Benzoyllecgonine	50
Fentanyl	Fentanyl	1
Methamphetamine	Methamphetamine	20
Opiates	Morphine	10
Oxycodone	Oxycodone	10
THC	Carboxy-THC	10
Benzodiazepine Screen by LC/MS/MS		Limit of Detection
7-aminoclonazepam		10 ng/mL
7-aminoflunitrazepam		10 ng/mL
Alpha hydroxyalprazolam		10 ng/mL
Alprazolam		10 ng/mL
Bromazepam		5 ng/mL
Chlordiazepoxide		10 ng/mL
Clonazepam		10 ng/mL
Clonazolam		5 ng/mL
Delorazepam		5 ng/mL
Desalkylflurazepam		5 ng/mL
Diazepam		10 ng/mL
Diclazepam		5 ng/mL
Estazolam		5 ng/mL
Etizolam		2 ng/mL
Flualprazolam		5 ng/mL
Flubromazolam		5 ng/mL
Flunitrazepam		10 ng/mL
Flurazepam		2 ng/mL
Lorazepam		2 ng/mL
Midazolam		10 ng/mL
Nordiazepam		10 ng/mL
Oxazepam		10 ng/mL
Temazepam		10 ng/mL
Opiate Screen by LC/MS/MS		Limit of Detection
6-acetylmorphine (6-MAM)		Blood: 1 ng/mL Urine: 10ng/mL
Buprenorphine		1 ng/mL
Codeine		10 ng/mL
Fentanyl		1 ng/mL
Herion		10 ng/mL
Hydrocodone		10 ng/mL
Hydromorphone		10 ng/mL
Morphine		10 ng/mL

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Norbuprenorphine		1 ng/mL
Norfentanyl		1 ng/mL
Noroxycodone		10 ng/mL
Oxycodone		10 ng/mL
Oxymorphone		10 ng/mL
Amines Screen by LC/MS/MS		Limit of Detection
Amphetamine	Blood: 10 ng/mL Urine: 20ng/mL	
Ephedrine	Blood: 10 ng/mL Urine: 20ng/mL	
MDA	Blood: 10 ng/mL Urine: 20ng/mL	
MDMA	Blood: 10 ng/mL Urine: 20ng/mL	
Methamphetamine	Blood: 10 ng/mL Urine: 20ng/mL	
Phentermine	Blood: 10 ng/mL Urine: 20ng/mL	
Pseudoephedrine	Blood: 10 ng/mL Urine: 20ng/mL	
Cocaine and Metabolite Screen by LC/MS/MS		Limit of Detection
Benzoylcegonine	Blood: 10 ng/mL Urine: 20ng/mL	
Cocaine	Blood: 10 ng/mL Urine: 20ng/mL	
Ecgonine Methyl Ester	Blood: 10 ng/mL Urine: 20ng/mL	
Cocaethylene	Blood: 10 ng/mL Urine: 20ng/mL	
THC and Metabolite Screen/Quant in Blood by LC/MS/MS		Limit of Quantitation
Delta-9 THC		1 ng/mL
Delta-9 THC-COOH		5 ng/mL
Delta-9 11-OH THC		1 ng/mL
		Limit of Detection
Delta-8 THC		1 ng/mL
Delta-8 THC-COOH		5 ng/mL
THC-COOH Screen in Urine by LC/MS/MS		Limit of Detection
THC-COOH		10 ng/mL
Synthetic Opioids Screen in Blood by LC/MS/MS		Limit of Detection
4-ANPP		0.5 ng/mL
Acetyl fentanyl		0.5 ng/mL
Acetyl norfentanyl		0.5 ng/mL
Acryl fentanyl		0.5 ng/mL
AH-7921		0.5 ng/mL
Alfentanil		0.5 ng/mL
Butyryl fentanyl		0.5 ng/mL
Carfentanil		0.5 ng/mL
Cyclopropyl fentanyl		0.5 ng/mL
Fentanyl		0.5 ng/mL
FiBF		0.5 ng/mL
Furanyl fentanyl		0.5 ng/mL
Methoxyacetyl fentanyl		0.5 ng/mL
Norfentanyl		0.5 ng/mL

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Sufentanil		0.5 ng/mL
U-47700		0.5 ng/mL
U-48800		0.5 ng/mL
Valeryl fentanyl		0.5 ng/mL
Ortho-fluorofentanyl		0.5 ng/mL
Para/meta-fluorofentanyl		0.5 ng/mL
Alcohol Screen/Quant in Blood, Vitreous, and Urine		Limit of Quantitation
Methanol		0.01 g/100 mL
Ethanol		0.01 g/100mL
Acetone		0.01 g/100 mL
Isopropanol		0.01 g/100 mL

Acid-Neutral Drug Screen

Drug:	Description / Comments:	LOD
Acetaminophen	Anti-pyretic; Analgesic	
Amobarbital	Barbiturate; CNS Depressant	
Barbital	Barbiturate; hypnotic; sleep aid	
Butabarbital	Barbiturate; CNS Depressant	
Butalbital	Barbiturate; CNS Depressant	
Carbamazepine	Anti-convulsant (Epilepsy); mood stabilizer	
Carisoprodol	Skeletal Muscle Relaxant	
Guaifenesin	Expectorant; Veterinary muscle relaxant	
Ibuprofen	NSAID; Anti-pyretic; Analgesic	
Levetiracetam	Anti-convulsant (Epilepsy)	
Meprobromate	CNS Depressant; Neutral drug	
Methohexital	Barbiturate Derivative; CNS Depressant	
Pentobarbital	Barbiturate; CNS Depressant	
Phenobarbital	Barbiturate; CNS Depressant	
Phenytoin	Anticonvulsant, CNS Depressant; Neutral drug	
Secobarbital	Barbiturate; CNS Depressant	
Thiopental	Barbiturate Prodrug (Pentobarbital); CNS Depressant	
Valproic acid	Anti-convulsant (Epilepsy); mood stabilizer	
Amobarbital	Barbiturate; CNS Depressant	
Butalbital	Barbiturate; CNS Depressant	
Butabarbital	Barbiturate; CNS Depressant	
Carbamazepine	Anti-seizure	
Carisoprodol	Muscle Relaxant	
Meprobamate	Muscle Relaxant	
Methohexital	CNS Depressant	
Pentobarbital	Barbiturate; CNS Depressant	
Phenobarbital	Barbiturate; CNS Depressant	
Phenytoin	Anti-seizure	
Secobarbital	Barbiturate; CNS Depressant	
Thiopental	Barbiturate; CNS Depressant	
Levetiracetam	Anti-seizure	