

Prescription and Over-the-Counter (OTC) Drug Screens

Please refer to Drug Testing at MayoMedicalLaboratories.com/articles/drug-book for further information. The page numbers in “Table 1” (page G4) refer to the *Drug Testing* overview.

This test is not appropriate for detecting drugs of abuse.

The prescription and OTC drug screens are available to test for a broad spectrum of drugs in serum, plasma, whole blood, gastric, urine, or other biological samples. Testing is performed by GC/MS. Positive results are definitive. The test is intended for use by a physician to manage an apparent overdose, intoxicated patient, or to determine if a specific set of symptoms might be due to the presence of drugs. The test is not designed to screen for intermittent or illicit use of drugs - as therapeutic concentrations of many drugs are below the detection threshold of this test. This test is designed to detect those drugs that have toxic effects, but for which there are known antidotes or active therapies that a clinician can initiate to treat the toxic effect.

Most drugs or their metabolites that can be detected in serum and plasma are also detected in urine. While urine is the preferred specimen when evaluating a patient who might be abusing drugs intermittently, serum or plasma is preferred when determining if a specific set of symptoms at the time of evaluation are related to drug exposure.

In urine, blood, gastric, or other biological samples, when drugs are identified above the reportable (detection) limits in the specimen, they are reported as “Present.”

Note: *Alcohol, LSD, digoxin, lithium, tetrahydrocannabinol (THC), and some benzodiazepines, opiates, and amphetamine-type stimulants are not detected by this procedure. For these drugs, the specific confirmation tests should be ordered.*

Table 1. lists the drugs detectable and limit of detection.

Note: Submission of less than the minimum sample volume requires increasing the limit of detection.

Table 1. Drug Screen Detection Limits:

Limits of Detection (LOD) Table — Prescription and OTC Drugs

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The limits of detections (LODs) listed below reflect the concentrations at which the specific drugs can be reliably detected. If the drug is detected at a level below the listed LOD, it will be reported only if it meets laboratory quality criteria for identification.

Drugs other than those listed below may be detected by GC-MS library matching and will be reported if they meet laboratory quality criteria for identification.

Note: Submission of less than the minimum sample volume requires increasing the limit of detection.

Drug	Aliases	LOD (mcg/mL)	Approximate upper Therapeutic Level in serum (mcg/mL)	Notes
Acetaminophen	Tylenol	10.00	30.00	
Amitriptyline	Vanatrip, Elavil,	1.00	0.20	
Amobarbital	Amytal	0.50	5.00	Preferred test for detection of barbiturates is a specific request; see Specific Drug Group Confirmation
Brompheniramine	Dimetapp, Lodrane	0.50	0.015	
Bupropion	Wellbutrin, Zyban	1.00	0.10	
Butabarbital	Butisol	0.50	25.00	Preferred test for detection of barbiturates is a specific request; see Specific Drug Group Confirmation
Butalbital		1.00	10.00	Preferred test for detection of barbiturates is a specific request; see Specific Drug Group Confirmation

Caffeine		1.50	20.00	
Carbamazepine	TEGretol,	2.00	12.00	
Carisoprodol	Soma, Vanadom	1.00	4.00	
Chlorpheniramine		0.50	0.01	
Chlorpromazine	Thorazine	1.00	0.30	
Citalopram	CeleXA	0.50	0.11	
Clomipramine	Anafranil	0.30	0.50	
Clozapine	Clozaril	0.50	0.35	
Codeine		1.00	0.20	Preferred test for detection of opiates is a specific request; see Specific Drug Group Confirmation
Cyclobenzaprine	Flexeril	0.50	0.03	
Desipramine	Norpramin	1.00	0.30	
Dextromethorphan	Robitussin, Benylin, VICKS 44	1.00	0.006	
Diazepam	Valium	0.25	2.50	Preferred test for detection of benzodiazepines is a specific request; see Specific Drug Group Confirmation
Diphenhydramine	Benadryl, Nytol	0.50	1.00	
Doxepin	SINEquan, Zonalon	0.50	0.15	
Doxylamine	Unisom	1.00	0.20	
Fentanyl	Duragesic, Actiq, Sublimaze	0.50	0.011	Preferred test for detection of opioids is a specific request; see Specific Drug Group Confirmation
Fluoxetine	PROzac	1.00	0.30	
Guaifenesin	Mucinex, Robitussin	1.00	1.50	
Ibuprofen	Advil, Motrin	2.50	50.00	
Imipramine	Tofranil	0.50	0.30	
Lamotrigine	LaMICtal	2.00	15.00	
Levetiracetam	Keppra	5.00	46.00	
Lidocaine		1.00	5.00	
Meperidine	Demerol	1.00	0.70	

Mephobarbital		1.00	7.00	Preferred test for detection of barbiturates is a specific request; see Specific Drug Group Confirmation
Meprobamate	Miltown, Trancot	1.00	30.00	
Metaxalone	Skelaxin	0.50	2.00	
Methadone	Dolophine	0.50	1.00	Preferred test for detection of opioids is a specific request; see Specific Drug Group Confirmation
Methsuximide	Celontin	0.50	0.04	
Methylphenidate	Concerta, Ritalin	1.00	0.02	
Midazolam	Versed	0.50	0.60	
Mirtazapine	Remeron	0.20	0.04	
Naproxen	Naprosyn, Aleve	10.00	90.00	
Nordiazepam	Nordazepam, Nordaz, Stilny, Madar, Vegesan	0.50	2.50	Preferred test for detection of benzodiazepines is a specific request; see Specific Drug Group Confirmation
Nortriptyline	Aventyl, Pamelor	0.50	0.17	
Oxcarbazepine Metabolite	10-Hydroxy-10,11-Dihydrocarbamazepine, Trileptal, 10-monohydroxy metabolite (MHD)	3.00	35.00	
Pentobarbital	Nembutal	0.50	10.00	
Phenobarbital	Luminal	0.50	40.00	Preferred test for detection of barbiturates is a specific request; see Specific Drug Group Confirmation
Phenytoin	Dilantin	2.50	2.00	
Primidone	Mysoline	2.50	12.00	
Promethazine	Phenergan	0.50	0.15	
Quetiapine	SEROquel	3.00	1.00	
Quinidine	Quinidex	2.00	5.00	

Salicylate	Aspirin	50.00	300.00	variability in the LOD, not reliable detected in urine.
Secobarbital	Seconal	0.50	2.00	Preferred test for detection of barbiturates is a specific request; see Specific Drug Group Confirmation
Sertraline	Zoloft	0.50	0.20	
Strychnine		0.50		
Topiramate	Topamax	2.00	20.00	
Tramadol	Ultram	0.50	0.80	Preferred test for detection of opioids is a specific request; see Specific Drug Group Confirmation
Trazodone	Desyrel	1.00	1.60	
Trimipramine	Surmontil	0.50	0.30	
Valproic Acid	Depakene,Depakote, Depacon, Divalproex	50.00	125.00	Exhibits variable recovery in urine.
Venlafaxine	Effexor	0.40	0.40	
Zaleplon	Sonata	1.00	49.00	
Zolpidem	Ambien	0.50	0.25	