SWEDISH

Swedish Laboratory Services – Chemistry Department

Drugs of Abuse

Concentrations of Compounds that Produce a Result Approximately Equivalent to the Cut-off Value.

Drug Category: Amphetamines

Compound/Drug	Cut-off
	Unit: ng/mL
d-amphetamine	1000
d,l-methamphetamine	2100
d,l-amphetamine	2150
l-methamphetamine	3650
l-amphetamine	11,500
MDA	6500
MDMA	34,300
MDEA	27,200
	Unit: µg/mL
4-chloramphetamine	12.2
benzphetamine*	1.0
bupropion	2220
chloroquine	4500
l-ephedrine	3500
fenfluramine	150
mephentermine	60
methoxyphenamine	360
nor-pseudoephedrine	170
phenmetrazine	13.0
phentermine	25.0
phenylpropanolamine	2000
propranolol	500
d,l-pseudoephedrine	8300
quinacrine	16,500
tranylcypromine	200
tyramine	600

* Benzphetamine metabolized to amphetamine and methamphetamine.

NOTE: Selegiline, a prescription medication used in the treatment of Parkinson's disease, metabolizes to l-amphetamine and l-methamphetamine. Therefore, patients taking Selegiline may test positive by amphetamine methods.

Drug Category: Benzodiazepine

Compound/Drug	Cut-off
	Unit: ng/mL
alprazolam	65
7-aminoclonazepam	2600
7-aminoflunitrazepam	590
bromazepam	630
chlordiazepoxide	3300
clobazam	260
clonazepam	580
clorazepate	*
clotiazepam	380
demoxepam	1600
N-desalkylflurazepam	130
N-desmethyldiazepam	110
diazepam	70
estazolam	90
flunitrazepam	140
flurazepam	190
halazepam	110
α-hydroxyalprazolam	100
α-hydroxyalprazolam glucuronide†	110
1-N-hydroxyethlylflurazepam	150
α-hydroxytriazolam	130
ketazolam	100
lorazepam	600
lorazepam glucuronide†	>20,000
medazepam	150
midazolam	130
nitrazepam	320
norchlordiazepoxide	2600
oxazepam	250
oxazepam glucuronide†	>50,000
prazepam	90
temazepam	140
temazepam glucuronide†	6900
tetrazepam	70
triazolam	130

* Clorazepate degrades rapidly in stomach acid to nordiazepam. Nordiazepam hydroxylates to oxazepam.

† The glucuronide metabolite of α-hydroxyalprazolam cross-reacts with this method.
Other glucuronide metabolites, such as lorazepam, oxazepam, and temazepam cross-react to a limited extent. The cross-reactivity of other glucuronide metabolites with this method is not known.

Drug Category: Barbiturate

Compound/Drug	Cut-off
	Unit: ng/mL
allobarbital	345
alphenal	284
amobarbital	348
aprobarbital	275
barbital	1278
5-ethyl-5-(4-hydroxyphenyl) barbituric acid	927
butabarbital	274
butalbital	304
butobarbital	349
cyclopentobarbital	304
pentobarbital	252
phenobarbital	509-971*
talbutal	194
thiopental	16,400
* Observed Range	

Drug Category: Cannabinoid (THC)

Compound/Drug	Cut-off
	Unit: ng/mL
8-β-11-Dihydroxy-Δ^9-THC	58
8-β-Hydroxy-Δ^9-THC	68
11-Hydroxy-Δ^8-THC	67
11-Hydroxy-Δ^9-THC	77
9-Carboxy-11-nor-Δ^9-THC-glucuronide	95

Drug Category: Cocaine Metabolite

Compound/Drug	Cut-off
	Unit: µg/mL
cocaine	40-119
ecgonine	7-20

Drug Category: Methadone

Compound/Drug	Cut-off
Methadone	300 ng/mL
NOTE: ONLY Methadone is detected. The method does not detect the metabolite, L-α-acetylmethadol (LAAM) at concentrations that would be found in the urine of patients on LAAM therapy.	

Drug Category: Methadone Metabolite

Compound/Drug	Cut-off
Methadone Metabolite	1000 ng/mL

Drug Category: Opiate

Compound/Drug	Cut-off
	Unit: ng/mL
codeine	102-306
dihydrocodeine	291
hydrocodone	247
hydromorphone	498
levallorphan	>5000*
levorphanol	1048
meperidine	50,000**
6-acetylmorphine	435
morphine-3-glucuronide (heroin metabolite)	626
nalorphine	5540*
naloxone	360,000
oxycodone	1500
oxymorphone	9300

* Therapeutic or toxic urinary levels of levallorpan and nalorphine are not reported in the literature.

** Meperidine urinary concentrations of 150,000 ng/mL have been measured in cases of fatal meperidine overdosage.

NOTE: Therapeutic doses of ofloxacin (Floxin) or levofloxacin (Levaquin) –non-opiates–may produce positive results with this method. A positive result from an individual taking ofloxacin or levofloxacin should be interpreted with caution and confirmed by another method.

Drug Category: Phencyclidine (PCP)

Compound/Drug	Cut-off
	Unit: ng/mL
N, N-diethyl-1-phenylcyclohexylamine (PCDE)	234
1-(4-hydroxypiperidino)phenylcyclohexane	420
1-(1-phenylcyclohexyl)morpholine (PCM)	41
1-(1-phenylcyclohexyl)pyrrolidine (PCPy)	54
4-phenyl-4-piperidinocyclohexanol	32
1-[1-(2-Thienyl)-cyclohexyl]morpholine (TCM)	80
1-[1-(2-Thienyl)-cyclohexyl]piperidine (TCP)	37
1-[1-(2-Thienyl)-cyclohexyl]pyrrolidine (TCPy)	83
	Unit: µg/mL
dextromethorphan	120
dextrorphan	97
meperidine	67
mesoridazine	50