URINE BARBITUATE

The EMIT II Plus Barbituate Assay detects both long-acting and short-acting barbituates in human urine.

Non-Interfering Substances

Each of the following compounds when added to urine at +/- 25% concentration of the cutoff, do not yield a false response relative to the 200 ng/mL cutoff:

Compound	Concentration
Acetone	1.0 g/dL
Ascorbic Acid	1.5 g/dL
Bilirubin	0.25 mg/dL
Creatinine	0.5 g/dL
Ethanol	1.0 g/dL
Gamma Globulin	0.5 g/dL
Glucose	2.0 g/dL
Hemoglobin	115 mg/dL
Human Serum Albumin	0.5 g/dL
Oxalic Acid	0.1 g/dL
Riboflavin	7.5 mg/dL
Sodium Chloride	6.0 g/dL
Urea	6.0 g/dL

Specificity

The table below lists concentrations of compounds that produce a result approximately equivalent to the 200 ng/mL and 300 ng/mL calibrator/control cutoffs, respectively. Each concentration represents the reactivity level for the stated compound when it is added to a negative urine specimen. These concentrations are within the range of the levels found in urine following use of the compound or, in the case of metabolites, the parent compound. If a specimen contains more than one compound detected by the assay, lower concentrations than those listed below may combine to produce a rate approximately equivalent to or greater than that of the cutoff calibrator.

Compound	Conc. At 200 ng/mL cutoff	Conc. At 300 ng/mL cutoff
Allobarbital	345	744
Alphenal	284	354
Amobarbital	555	923
Aprobarbital	275	478
Barbital	1278	4148
5-Ethyl-5-(4-hydroxyphenyl) barbituric acid	927	4719
Butabarbital	274	523
Butalbital	304	475
Butobarbital	349	875
Cyclopentobarbital	304	527

Pentobarbital	1087-1631*	2675-4013*
Talbutal	194	262
Thiopental	1109	10174

*Observed range

The table below lists the compounds that produce a negative result by the EMIT II Plus Barbituate Assay. Specificity testing was performed at the 200 ng/mL cutoff which represents the greatest potential for cross-reactivity. Positive results for compounds structurally unrelated to barbituate have not been observed.

Compound	**Conc. Tested (µg/mL) at the 200 ng/mL cutoff**
Acetaminophen	1000 µg/mL
α-Acetyl-N,N-dinormethadol (dinor LAAM)	25 µg/mL
l-α-Acetylmethadol (LAAM)	25 µg/mL
N-Acetylprocainamide (NAPA)	400 µg/mL
Acetylsalicylic Acid	1000 µg/mL
Amitriptyline	1000 µg/mL
d-Amphetamine	1000 µg/mL
Benzoylecgonine	1000 µg/mL
Buprenorphine	100 µg/mL
Caffeine	1000 µg/mL
Cimetidine	1000 µg/mL
Clomipramine	2.5 µg/mL
Clonidine	1000 µg/mL
Codeine	500 µg/mL
Cotinine	100 µg/mL
Cyclobenzaprine	1000 µg/mL
Desipramine	800 µg/mL
Diphenhydramine	1000 µg/mL
Doxepin	1000 µg/mL
Fluoxetine	1000 µg/mL
Glutethimide	300 µg/mL
Ibuprofen	1000 µg/mL
Ketamine	100 µg/mL
Ketorolac Tromethamine	1000 µg/mL
Lormetazepam	1 µg/mL
LSD	10 ng/mL
Meperidine	1000 µg/mL
d-Methamphetamine	35 µg/mL
Methaqualone	1500 µg/mL
Morphine	1000 µg/mL
Naproxen	1000 µg/mL
Nortriptyline	1000 µg/mL
Oxazepam	300 µg/mL
Phencyclidine	1000 µg/mL
Phenytoin	1000 µg/mL
Promethazine	1000 µg/mL

Propoxyphene	1000 µg/mL
Ranitidine	1000 µg/mL
Scopolamine	500 µg/mL
11-nor-L1^{9}-THC-9-COOH	100 µg/mL
Thioridazine	100 µg/mL
Tramadol	1000 µg/mL
Tyramine	100 µg/mL
Zidovudine (AZT)	2 mg/mL
Zolpidem	100 µg/mL

Sensitivity

The sensitivity level (minimum detectable limit) of the Emit II Plus Barbituate Assay is 18 ng/mL. This level represents the lowest concentration of secobarbital that can be distinguished from 0 ng/mL with a confidence level of 95%.

CAMC laboratories use the 200 ng/mL cutoff for the barbituate assay.

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