

SERUM TRICYCLIC SCREEN

Sensitivity

The sensitivity of the Emit[®] tox Serum Tricyclic Antidepressant Assay is 75 ng/ml for serum and plasma. Sensitivity is defined as the lowest concentration of nortriptyline that can be distinguished from 0 ng/ml with a confidence level of 95%.

Specificity

The Emit[®] tox Serum Tricyclic Antidepressant Assay detects specific tricyclic antidepressants in serum or plasma. High therapeutic concentrations, i.e. 200-300 ng/ml¹¹ and toxic levels of chlorpromazine may give a positive result in this assay. Therapeutic concentrations of cyclobenzaprine, i.e., 20-34 ng/ml^{12,13} should not give a positive result in this assay. The assay also detects thioridazine at therapeutic concentrations (> 1,5 ug/ml), diphenhydramine at toxic concentrations (>12 ug/ml), orphenadrine citrate at fatal concentrations

(> 6.0 ug/ml) and cyproheptadine at therapeutic concentrations (> 0.42 ug/ml)^{14,17}. The assay's response to the four parent compounds differs slightly, please see the following table which lists the concentrations that will produce a positive result.

Compound	Concentrations
Parent Compound	
Amitriptyline	200 – 400 ng/ml
Desipramine	200 – 400 ng/ml
Imipramine	200 – 400 ng/ml
Nortriptyline	300 ng/ml
Metabolites	
10-Hydroxy-amitriptyline	1250 ng/ml
2-Hydroxy-desipramine	1250 ng/ml
2-Hydroxy-imipramine	750 ng/ml
10-Hydroxy-nortriptyline	1750 ng/ml
Other Tricyclic Antidepressants	
Clomipramine	500 ng/ml
Dothiepin	500 ng/ml
Doxepin	500 ng/ml

Protriptyline	500 ng/ml
Trimipramine	500 ng/ml

The following table lists the concentrations of compounds that were tested and found to give a negative response.

Compound	Concentration Tested
Acetaminophen	1500 ug/ml
Amoxapine	20 ug/ml
Amphetamine	500 ug/ml
Carbamazepine	100 ug/ml
dextromethorphan	1000 ug/ml
Diazepam	500 ug/ml
Ethchlorvynol	500 ug/ml
Maprotiline	2000 ug/ml
Methaqualone	100 ug/ml
Morphine	100 ug/ml
Perphenazine	350 ug/ml
Phencyclidine	1000 ug/ml
Phenytoin	100 ug/ml
Promethazine	500 ug/ml
Propoxyphene	500 ug/ml
Secobarbital	500 ug/ml