



Laboratory Services

Job Aid: Doctor Info For MEDTOXScan Drugs of Abuse Screen

PRINCIPLE

The TOX/See Drug Screen Test is an immunoassay based on the principle of competitive binding. Drugs which may be present in the urine specimen compete against their respective drug conjugate for binding sites on their specific antibody. Each test in the device contains mouse monoclonal antibody coupled particles and corresponding drug-protein conjugates. The procedural control line contains goat anti-rabbit IgG polyclonal antibodies and rabbit IgG. When the urine sample is placed in the sample well of a test strip, the dried antibody-colloidal gold on the sample pad dissolves and the urine wicks up the white strips carrying the reddish-purple antibody-colloidal gold with it. The PROFILE®-V MEDTOXScan® Drugs of Abuse Test System will detect specific classes of drugs in urine because drug(s) in the urine and the drug(s) conjugated to the protein compete to bind to the antibody-colloidal gold. A test line will form when drug in the sample is below the detection threshold (negative result).

The MEDTOXScan® Reader scans the test device and utilizes a contact imaging sensor (CIS) to capture relative line intensities. Software algorithms and barcodes are used to identify the test device, the drug tests associated with the test device and whether the presence or absence of a line is associated with a negative or positive result, respectively. The results of the scans are displayed on the MEDTOXScan® Reader screen or, optionally, can be printed.

INTERPRETATION/ RESULTS REPORTING

The PROFILE®-V MEDTOXScan® Drugs of Abuse Test System detects drug classes at the following cutoff concentrations:

Drug Class	Cut-Off	Drug Class	Cut-Off
AMP Amphetamine (d-Amphetamine)	500 ng/mL	OPI Opiates (Morphine)	100 ng/mL
BAR Barbiturates (Butalbital)	200 ng/mL	OXY Oxycodone (Oxycodone)	100 ng/mL
BZO Benzodiazepines (Nordiazepam)	150 ng/mL	PCP Phencyclidine (Phencyclidine)	25 ng/mL
COC Cocaine (Benzoylecgonine)	150 ng/mL	PPX Propoxyphene (Norpropoxyphene)	300 ng/mL
MAMP Methamphetamine (d-Methamphetamine)	500 ng/mL	THC Cannabinoids (11-nor-9-carboxy- Δ^9 -THC)	50 ng/mL
MTD Methadone (Methadone)	200 ng/mL	TCA Tricyclic Antidepressants(Desipramine)	300 ng/mL

NON CROSS-REACTIVE ENDOGENOUS COMPOUNDS

The PROFILE®-V MEDTOXScan® Drugs of Abuse Test System was evaluated for cross reactivity with fifteen endogenous compounds. The compounds were dissolved in appropriate solvents at a concentration of at least 1.0 mg/mL. Each compound was further diluted to 100 µg/mL except for albumin (20 mg/mL) and bilirubin (200 µg/mL). None of these compounds showed cross-reactivity at the referenced concentrations to any of the PROFILE®-V MEDTOXScan® Test Devices.

Acetaldehyde	Creatinine	Hemoglobin, Human
Sodium Chloride	Acetone	Epinephrine
Tetrahydrocortisone	Albumin, Human	Estradiol
d,1-Thyroxine	Bilirubin	Estriol
Uric Acid	Cholesterol	Glucose Std. Solution

UNRELATED COMPOUNDS, PRESCRIPTION AND OVER-THE-COUNTER MEDICATIONS

The following compounds were tested for reactivity to the PROFILE®-V MEDTOXScan® Drugs of Abuse Test System. Listed compounds were dissolved in appropriate solvents and then added to drug-free urine for testing. Unless otherwise noted by a drug name abbreviation such as “AMP” or “BAR” etc., all of the listed compounds were negative in each of the tests at 100 µg/mL or the highest level tested. If a drug name is followed by an abbreviation such as “AMP” or “BAR” etc., check the “Related Compounds and Cross Reactants” listing for the drug in question under the appropriate heading (AMP, BAR, etc.) to find its level of cross-reactivity to that test.

Acetaminophen	Dextromethorphan	Lysergic Acid	Phendimetrazine
Acetylsalicylic Acid	Diacetylmorphine- OPI	Lysergic Acid Diethylamide (LSD)	Phenethylamine- MAMP
Allobarbitol- BAR	Diazepam- BZO	Maprotiline- TCA	Pheniramine
Alprazolam- BZO	Diclofenac	MDA- AMP	Phenmetrazine
Alprazolam, 1-Hydroxy- BZO	Dihydrocodeine- OPI, OXY	Mesoridazine	Phenylephrine- MAMP
7-Aminoclonazepam	Diphenhydramine	Methadone- MTD	Phenylpropanolamine
7-Aminoflunitrazepam	Diphenylhydantoin (Phenytoin)- BAR	d-Methamphetamine- MAMP	Piroxicam
Amitriptyline- TCA	Domperidone	l-Methamphetamine- MAMP	Prednisone
Amobarbital- BAR	Dopamine	Methaqualone	Procainamide
Amoxapine	Doxepin- TCA	Methcathinone	Procaine- MAMP
Amoxicillin	Doxylamine	Methocarbamol	Prochlorperazine- TCA
d-Amphetamine- AMP	Ecgonine	Methylphenidate	Promazine- TCA
l- Amphetamine- AMP	Ecgonine Methyl Ester	Metoprolol	Promethazine
Ampicillin	EDDP-(Primary metabolite of methadone)	Midazolam- BZO	Propoxyphene- PPX
Apomorphine	Efavirenz (Sustiva)	Mirtazapine	Propranolol
l-Ascorbic Acid	EMDP-(Secondary metabolite of methadone)	6-Monoacetylmorphine- OPI	Protriptyline- TCA
Atomoxetine	Ephedrine- MAMP	Morphine- OPI, OXY	d-Pseudoephedrine
Atropine Sulfate	Erythromycin	Morphine 3-β-D-Glucuronide- OPI	Pyrilamine
Barbital- BAR	Ethanol	Morphine 6-β-D-Glucuronide- OPI, OXY	Quetiapine (Seroquel) TCA
Barbituric Acid	Ethylmorphine- OPI, OXY	Nalorphine- OPI	Quinidine
Benzocaine (ethyl-4-aminobenzoate)	Fenfluramine- MAMP, AMP	Naloxone- OXY	Ranitidine
Benzoic Acid	Fenpropfen	Naltrexone- OXY	Riboflavin
Benzoyllecgonine- COC	Fentanyl	Naproxen	Salicylic Acid
Benzphetamine	Flunitrazepam- BZO	Nicotine	Secobarbital- BAR
Benztropine	Fluoxetine (Prozac)	Nitrazepam- BZO	Sertraline (Zoloft)

Brompheniramine	Flurazepam	11-Nor-9-carboxy- Δ^9 -THC - THC	Sildenafil (Viagra)
Buprenorphine- BUP	Fluvoxamine	Norclomipramine	Sulfamethazine
Bupropion	Furosemide	Norcodeine- OPI, OXY	Sulindac
Butabarbital- BAR	Glutethimide	Nordiazepam- BZO	Talbutal- BAR
Butalbital- BAR	Haloperidol	Nordoxepin- TCA	Temazepam glucuronide- BZO
Caffeine	Hexobarbital	Norlysergic Acid	Temazepam- BZO
Cannabidiol	Hydralazine	Normeperidine	Tetracycline
Cannabinol	Hydrochlorothiazide	Norpropoxyphene- PPX	Δ^8 -Tetrahydrocannabinol□
Carbamazepine	Hydrocodone- OPI, OXY	l-Norpseudoephedrine	Δ^9 -Tetrahydrocannabinol- THC
Carbamazepine- 10,11 epoxide	Hydrocortisone	Nortriptyline- TCA	Tetrahydrozoline
Carisoprodol (Meprobamate)	Hydromorphone- OPI, OXY	Ofloxacin	Thebaine- OPI
Cephalexin	Hydroxybupropion	Olanzapine	Theophylline
Chlordiazepoxide	l-11-Hydroxy- Δ^9 -THC	Orphenadrine	Thiopental
Chlorothiazide	4-Hydroxyphencyclidine- PCP	Oxaprosin	Thioridazine
Chlorpheniramine	Hydroxyzine	Oxazepam glucuronide- BZO	Thiothixene
Chlorpromazine	Ibuprofen	Oxazepam- BZO	Tolmetin (Tolectin)
Clobazam- BZO	Imipramine- TCA	Oxycodone- OXY	Trazodone
Clomipramine	Ketamine	Oxymetazoline	Triamterene
Clonazepam- BZO	Ketoprofen	Oxymorphone- OXY	Triazolam, 1-hydroxy- BZO
Clorazepate- BZO	Levorphanol- OPI	Penicillin G	Triazolam- BZO
Clozapine- TCA	Lidocaine	Pentazocine	Trifluoperazine
Cocaine- COC	Lithium carbonate	Pentobarbital- BAR	Trimethoprim
Codeine- OPI, OXY	Loperamide	Perphenazine- TCA	Trimipramine- TCA
Cotinine	Lorazepam glucuronide- BZO	Phencyclidine- PCP	Tripelennamine
Cyclobenzaprine- TCA	Lorazepam- BZO	Penicillin G	Tryptophan
Cyclopentobarbital- BAR	Loxapine	Pentazocine	Tyramine
Desalkylflurazepam- BZO	Lorazepam- BZO	Pentobarbital- BAR	Valproic Acid
Desipramine- TCA	Loxapine	Perphenazine- TCA	Venlafaxine
Desmethylchlordiazepoxide- BZO	MDE (MDEA)- MAMP	Phencyclidine- PCP	Verapamil
Desmethylflunitrazepam- BZO	MDMA- MAMP	Phenobarbital- BAR	
Desmethylvenlafaxine		Phenothiazine	
Diethylpropion	Mephobarbital	Phentermine- AMP	
Digoxin	Mepivacaine	Phenylbutazone	

NOTES/ LIMITATIONS

1. The TOX/See Drug Screen Test provides only a qualitative, preliminary analytical result. A secondary analytical method should be used to obtain a confirmed result if requested by the care provider. Gas Chromatography/mass spectrophotometry (GCMS) is the preferred confirmatory method.
2. There is the possibility that technical or procedural errors, as well as other interfering substances in the urine specimen may cause erroneous results. Insufficient specimen or incorrect procedural techniques are the most likely reasons for control line failure.
3. Adulterants, such as bleach and/or alum, in urine specimens may produce erroneous results regardless of the analytical method used. If adulteration of the specimen is suspected, the test should be repeated with another specimen. *NOTE:* Invalid or incorrect results may also be due to adulterated or improperly stored urine samples, or error in performing the test.
4. The test does not distinguish between drugs of abuse and certain medications.
5. Do not touch test strips in large viewing window of the PROFILE®-V MEDTOXScan® Test Device.
6. Do not use PROFILE®-V MEDTOXScan® Test Device if strips are damaged or dirty.
7. Do not apply labels or tape to the PROFILE®-V MEDTOXScan® Test Device.
8. Do not write outside of the ID area on the left side of the PROFILE®-V MEDTOXScan® Test Device top.
9. Avoid contaminating the top of the device with urine sample. Clean any urine off the top of the test device using a dry wipe to prevent contamination of the MEDTOXScan® Reader sensor.

10. The PROFILE[®]-V MEDTOXScan[®] Drugs of Abuse Test System is only for use with unadulterated preservative free, human urine samples. Urine samples that are either extremely acidic (below pH 4.0) or basic (above pH 9.0) may produce erroneous results. If adulteration is suspected, obtain an additional specimen and re-test. Clear polystyrene containers may absorb some drugs; use of polypropylene containers is advised.
11. A presumptive positive result for any drug does not indicate the level of intoxication, administration route or concentration of that drug in the urine specimen.
12. A negative result may not necessarily indicate drug-free urine. Negative results can be obtained when drug is present but below the cut-off level of the test.
13. Place PROFILE[®]-V MEDTOXScan[®] Test Devices in MEDTOXScan[®] Reader immediately after adding the sample. Once the test device has been read in the MEDTOXScan[®] Reader, it must not be reinserted for a repeat reading, as the ten minute timing will begin again. If a repeat reading is required, rerun the sample on a fresh test cassette

REFERENCES

1. PROFILE-V MEDTOXScan Reader System Quick Reference Instructions P/N 102035 Rev. 03/18
2. PROFILE-V MEDTOXScan Drugs of Abuse Test System Package Insert, P/N 102038, Rev. 07/17