



Toxicology Services and Information

The laboratory offers three in-house toxicology screens:

- TOXIQL: Drug Screen, Comprehensive, Urine
- DRG-LIM: Drug Screen, Rapid Blood (ALC, ACETA, SAL)
- DRUGS: Drug Screen, Rapid Urine

"Drug Screen, Comprehensive, Urine" is a two-tiered urine drug screen that detects a broad range of therapeutic drugs, drugs of abuse, and volatile substances. Drugs of abuse and alcohol can be screened immunologically and automatically confirmed by a second analytical method in house, typically GC-MS (gas chromatography-mass spectrometry). Screening for therapeutic drugs is performed by GC-MS scanning method; positive findings are presumptive; confirmation can be requested from outside reference laboratories when it is available. "Drug Screen, Comprehensive, Urine" is available only as a routine test, is not available on a stat basis, and is set up only during the hours of 8 AM - 5 PM, Monday through Fri-day.

"Drug Screen, Rapid..." assays are available 24 hours a day, 7 days a week, without pathologist approval. The tests require blood and urine specimens if both are requested. They are not comprehensive; only drugs in the table below are included. From the Hospital order screens: order "Drug Screen-Rapid", this will request both the blood and urine screens. From the Clinic: you must order "Drug Screen, Rapid Blood" and "Drug Screen, Rapid Urine" individually.

Blood (quantitative)

- Acetaminophen
- Ethanol
- Salicylate

Urine (qualitative screen only)

- Amphetamine (AMP)
- Barbiturates (BAR)
- Benzodiazepines (BZO)
- Buprenorphine (BUP)
- Cannabinoids (THC)
- Cocaine (COC)
- Methadone (MTD)
- Methamphetamine (MAMP)
- Opiates (OPI)
- Oxycodone (OXY)
- Phencyclidine (PCP)
- Propoxyphene (PPX)
- Tricyclic Antidepressants (TCA)

Regarding the Drug Screen, Rapid Urine:

All assays on urine specimens are class-specific immunoassays. Positive results are *not* confirmed by an alternate method. The ordering physician should consider the results in light of the clinical picture, and order confirmatory testing if necessary. Assuming that there is no cross reactivity, a positive result for drugs of abuse indicates the presence of the drug or drug metabolites and does *not* indicate the level of intoxication, the urinary concentration of the drug, or the route of administration. Interpretation of positive results for Tricyclic Antidepressants is discussed below.

Order the “Drug Screen, Rapid Urine” only when a rapid result is required to make decisions affecting patient care. When a “Drug Screen, Rapid Urine” is ordered, the laboratory will store the remaining specimen for up to one week.

The physician can order a “Drug Screen, Comprehensive, Urine” on the stored specimen at any time by calling Specimen Processing at extension 16220, then indicate that you want to order a “Drug Screen, Comprehensive, Urine” on a stored specimen. Give the Medical Record Number, Doctor Number of ordering physician, and date and time of original specimen.

Specimen Requirements

| | |
|------------------------------------|---------------------------|
| Drug Screen, Comprehensive, Urine: | 30 mL random urine |
| Drug Screen, Rapid Blood: | 1 mL serum (red top tube) |
| Drug Screen, Rapid Urine: | 30 mL random urine |

Information on Specificity and Cross-Reactivity of Individual Drugs in the Rapid Urine

Drug Screen is available in the PROFILE®-V MEDTOXScan® Drugs of Abuse Test System INSERT document at the following web site:

<http://www.medtoxdiagnostics.com/wp-content/uploads/102038-Package-Insert-PV-Test-System.pdf>

Table of Contents for web site pdf file:

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| Page 2 | Detection periods. |
| Page 4 | Limitations of test procedure. |
| Page 4-7 | Sensitivity, Accuracy, Precision data |
| Page 7-11 | Cross Reactivity data |

Concentration level of major drug or metabolite for Marshfield’s rapid urine drug screening device (PROFILE®-V MEDTOXScan® Drugs of Abuse Test System) that are expected to give a positive test result are as follows:

| Result | Major drug/class or metabolite | |
|--------|---|-----------|
| AMPQL | Amphetamine | 500 ng/mL |
| BARQL | Barbiturates (Butalbital) | 200 ng/mL |
| BZOQL | Benzodiazepines (Nordiazepine) | 150 ng/mL |
| BUPRQL | Buprenorphine | 10 ng/mL |
| COCQL | Cocaine Metabolite (Benzoyllecgonine) | 150 ng/mL |
| MAMPQL | Methamphetamine | 500 ng/mL |
| MTDQL | Methadone | 200 ng/mL |
| OPIQL | Opiates (Morphine) | 100 ng/mL |
| OXYCQL | Oxycodone | 100 ng/mL |
| PCPQL | Phencyclidine | 25 ng/mL |
| PPXQL | Propoxyphene (Norpropoxyphene) | 300 ng/mL |
| THCQL | 11-nor-9-carboxy- Δ 9-THC | 50 ng/mL |
| TCAQL | Tricyclic Antidepressants (Desipramine) | 300 ng/mL |

Drugs or urinary metabolites at concentration levels near the cutoff level shown in the far right column above would be expected to show positivity in this drug class. For examples, most barbiturates will show positivity at levels in the 200-300 ng/mL range. Substances or metabolites with limited cross-reactivity would have to be present at significantly higher levels than the cutoff shown in order to generate a positive result.

Ethanol Assay Cross Reactivity

The assay is specific for ethanol and does not cross react extensively with other alcohols of toxicological interest. If methanol, ethylene glycol, or isopropanol ingestion is suspected, contact the Pathologist On Call.

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