

DRUG SCREENING

Serum or Urine?

Mary M Mayo, PhD, DABCC, MT (ASCP)
Clinical Laboratory Scientific Director

OVERVIEW AND CLINICAL UTILITY:

When screening for Drugs of Abuse (DOA), or when monitoring patients taking prescription pain medications, the specimen of choice is urine as opposed to serum or plasma. Why Urine? Urine is considered the gold standard; it is non-invasive and fast. Samples are easy to collect and test and there is generally a longer window of detection than blood. Drugs of abuse can be detected in urine for days to weeks after exposure, in contrast to blood detection which is generally in hours. For example, heroin has a half-life of 6 to 15 minutes in blood, but opiate metabolites may be detected in urine for 2 to 3 days.

Testing methodologies for DOA: Initial screening by immunoassay typically requires no specimen extraction, minimal specimen handling and qualitative or semi-quantitative results. Tests are conducted using mandated (NIDA) cut-off concentrations. Immunoassays may cross react with more than one drug in a particular class, or target certain metabolites of a particular drug. For example, the target analyte for the cocaine assay is benzoylecgonine. Confirmation of a positive urine drug screen requires GC/MS or LC/MS.

Drug screening in prescription pain management is done for a number of reasons: patients are not compliant (negative urine drug screen for prescribed drug); patients divert medications (giving or selling to other people); drug screens may not be positive at expected levels; and/or patients are taking too much or are taking another substance (either from another prescription or an illicit drug). Urine is again the specimen of choice for screening, with a clear indication of the particular drug of interest. Quantitation can be accomplished with liquid chromatography/ tandem mass spectrometry (LC/MS/MS) if necessary.

Adulteration of urine is always a concern. Testing temperature after collection (should be 90 to 100°F if taken within 4 minutes of collection), measurement of urine creatinine and specific gravity by the testing laboratory are all ways to detect adulteration/dilution/or substitution of urine.

Any question or concerns about drug screening may be directed to Dr. Mayo at 615-562-9505.

TEST METHODOLOGY: Immunoassay

ORDERING:

TEST	TEST NAME	CPT	LOINC
UDSL	Drugs of Abuse 9 Panel Screen, Urine	80101 x 9	Refer to DOS

TEST PERFORMED: Monday - Friday

TURNAROUND TIME: 24 hours