

Confirmation Testing Q&A (part 2)

Is one confirmation methodology better than another?

The type of confirmation utilized by a program isn't necessarily "better" than another method; it depends upon the program's and patient's needs. While GC/MS is widely considered "The Gold Standard" of drug-testing, it is typically a more expensive test. For most substance abuse treatment programs or for non-legal matters, the TLC methodology is sufficient.

There are limitations to what a TLC confirmation can provide, however. First, a TLC confirmation does not supply quantitative results for each analyte present; only qualitative results are reported. If a patient's sample screens Positive for Opiates, a TLC confirmation will provide Positive/Negative results for Morphine, Codeine, Hydrocodone, Hydromorphone and 6-MAM, but no values are assigned. A GC/MS or LC/MS/MS confirmation will provide values for any drugs detected.

Second, due to limitations in the technology, a TLC confirmation cannot be performed for certain drugs (see table to right for analytes confirmed by SDRL). It is possible, however, to use multiple confirmation methodologies on the same sample (i.e. TLC for Amphetamines and GC/MS for Benzodiazepines).

SCREEN Drug Class	TLC Analytes	GC/MS and LC/MS/MS Analytes
6-MAM	included with Opiates	6-Acetylmorphine
Alcohol	n/a	Alcohol
Amphetamines Class	Amphetamine Methamphetamine	Amphetamine Methamphetamine
Barbiturates Class	Pentobarbital Secobarbital Phenobarbital Butalbital	Pentobarbital Secobarbital Phenobarbital Butalbital Amobarbital
Benzodiazepine Class	n/a	Nordiazepam Temazepam Oxazepam Clonazepam Lorazepam Alpha-Hydroxy-Triazolam A-OH-Alprazolam Desalkylfurazepam Nitrazepam
Buprenorphine	n/a	Norbuprenorphine
Cocaine	Cocaine (Benzoyllecgonine)	Cocaine (Benzoyllecgonine)
Methadone	Methadone	Methadone
Methadone Metabolite	Methadone Metabolite	Methadone Metabolite
MDA/MDMA	n/a	MDA/MDMA
Opiates Class	Codeine Morphine Hydrocodone Hydromorphone 6-MAM (6-Acetylmorphine)	Codeine Morphine Hydrocodone Hydromorphone Oxycodone Oxymorphone
Oxycodone	n/a	
Phencyclidine (PCP)	n/a	Phencyclidine (PCP)
Propoxyphene	n/a	Norpropoxyphene
THC (Cannabinoids)	THC (Cannabinoids)	THC (Cannabinoids)

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Question of the Month

The number of people aged 18 to 25 who used prescription drugs for non-medical purposes in the past month declined 14% – from 2.0 million in 2010 to 1.7 million in 2011 – SAHMSA reported in their annual National Survey on Drug Use and Health (NSDUH). Non-medical use of prescription drugs among children aged 12 to 17 and adults aged 26 or older remained unchanged. Overall, the use of illicit drugs among Americans aged 12 and older remained stable since the last survey in 2010. The NSDUH shows that 22.5 million Americans aged 12 or older were current (past month) illicit drug users – (8.7% of the population 12 and older versus 8.9% in 2010). (Source: www.sahmsa.gov)

Question: "What does it mean when a sample is Hemolyzed?"
Answer: Hemolyzed samples contain blood cells that have broken open and released the cellular content into the serum. This cellular content interferes with most testing procedures. It releases proteins that interfere with antibody/antigen immunoassay reactions. In addition, it causes a release of chromogenic material that interferes with spectrophotometric assays. In samples where the cellular components are being measured, as in a CBC, any decomposition of these cellular components reduces the number measured. Further, when the cell wall breaks open releasing its contents, the cell wall can be mistakenly detected as cellular components themselves, such as platelets. In general, hemolysis is the first stage in decomposition of the sample, and it indicates the difference between a sample that is fresh and can be analyzed versus a sample that is in various stages of decomposition and cannot be analyzed accurately.