

Laboratory Drug-Testing Terminology 101 (part 1)

Drug Screen – a drug screen is a test used to detect either illicit or prescription drugs in a patient’s system. Immunoassay is the most commonly used method to perform a drug screen. A typical screen is performed either on a urine or saliva sample and produces qualitative results – either Positive or Negative – at the drug class level.

Drug Class – drugs are typically grouped into specific “families” or “classes”. Examples of drug classes are Amphetamines, Barbiturates, Benzodiazepines and Opiates. A urine or saliva drug screen only tests and reports the presence or absence of drugs at the drug class level. A Positive drug screen for Opiates reveals the presence of Opiates in the patient’s system but cannot identify which specific Opiate(s) caused the Positive result.

Panel – a panel is a collection of drug screens. A 6-panel urine drug screen might consist of testing for the classes of Amphetamines, Barbiturates, Benzodiazepines, Cocaine, Methadone and Opiates. Panels are usually customized to each program’s and/or state’s requirements. Additional drug screens can be added to a

panel for specific samples based on program or patient needs. For example, a screen for THC can be added to the previously mentioned 6-panel for patient John Doe (only upon request). Results are only generated for the drugs on the specific panel; if THC is not on the panel but in the patient’s system, a positive result for THC will not be reported, as that test is not performed.

Analytes – analytes are the individual drugs within each drug class. For example, the analytes within the Amphetamines drug class are Amphetamine and Methamphetamine. To determine which analytes are present in a urine or saliva sample, a confirmation test must be performed; this information is not available through a drug screen.

Confirmation Test – a confirmation test is used to verify the results of a drug screen. Whereas a screen tests at the class level, a confirmatory test identifies the specific analytes present in a sample. Confirmation tests utilize different testing methodologies than those used for drug screens. The most common confirmation methodologies are GC/MS (Gas Chroma-

tography/Mass Spectrometry), TLC (Thin Layer Chromatography) and LC/MS (Liquid Chromatography/Mass Spectrometry). GC/MS and LC/MS confirmations also produce quantitative results (i.e. specific quantities of each analyte present in the sample) whereas TLC confirmations only produce qualitative results (Positive or Negative).

Retest – a retest of a urine or saliva sample is the exact same test performed a second time. If the initial test is an 8-panel drug screen, the retest will be a drug screen for the positive/negative drug in question. If the initial test is a 7-panel screen plus a GC/MS confirmation, a GC/MS confirmation will be performed for the drug(s) indicated.

Accession Number – the unique identification number assigned to each specific patient sample. When calling in to the laboratory to seek additional information about a sample or a patient’s results, providing the correct accession number allows the lab to quickly retrieve the data.

Part 2 of this article will appear in the October issue of *Toxicology Times*

??? Did You Know ???

In July 2012, in an effort to address the threat of synthetic drugs on U.S. citizens, President Obama signed the Synthetic Drug Abuse Prevention Act of 2012 into law. This legislation bans the synthetic compounds commonly found in synthetic marijuana (“K2” or “Spice”), and synthetic stimulants (“Bath Salts”) by placing them under Schedule 1 of the Controlled Substance Act. Due to the difficulty in regulating synthetic drugs – designers are constantly modifying their “recipes” to circumvent laws – the government will monitor and update the list of banned substances under the SDAPA as new compounds emerge.

(Source: Office of National Drug Control Policy)

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Question of the Month

Question: “I have a patient who is taking Opana...how will that appear on the patient’s drug screen?”

Answer: Opana is Oxymorphone. Other names for the same medication are Opana ER, Numorphan or Numorphone. The immunoassay class screen for Oxycodone is also sensitive to Oxymorphone, but will not specifically identify the Oxymorphone. If the patient is taking a high quantity of Oxymorphone, it may cross-react with the Opiates class screen as well. The only way to specifically identify Oxymorphone vs. Oxycodone is to perform a GC/MS confirmation. The expected result by GC/MS for a patient taking Opana is Oxymorphone only. If the result of the GC/MS confirmation indicates a positive result for both Oxycodone and Oxymorphone, then that would indicate the presence of an Oxycodone source as well.