MAYO CLINIC LABORATORIES

Test Definition: CDA7X

Drug Abuse Survey with Confirmation, Panel 9, Chain of Custody, Random, Urine

Overview

Useful For

Detecting drug abuse involving alcohol, amphetamines, barbiturates, benzodiazepines, cocaine, methadone, opiates, phencyclidine, and tetrahydrocannabinol

This chain-of-custody test is intended to be used in a setting where the test results can be used definitively to make a diagnosis.

This test is **not intended** for use in employment-related testing.

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
THCX	Carboxy-THC Confirmation, CoC, U	Yes	No
PCPX	Phencyclidine Confirmation, CoC, U	Yes	No
MTDNX	Methadone Confirmation, CoC, U	Yes	No
COKEX	Cocaine and metabolite Conf, CoC, U	Yes	No
BNZX	Benzodiazepines Conf, CoC, U	Yes	No
BARBX	Barbiturates Confirmation, CoC, U	Yes	No
AMPHX	Amphetamines Confirmation, CoC, U	Yes	No
OPATX	Opiate Confirmation, CoC, U	Yes	No
ETOHX	Ethanol, CoC, U	No	No

Additional Tests

Test Id	Reporting Name	Available Separately	Always Performed
COCH	Chain of Custody Processing	No	Yes
ADLTX	Adulterants Survey, CoC, U	Yes	Yes

Testing Algorithm

Testing begins with screening tests for alcohol and drugs of abuse. Positives are confirmed and quantitated by definitive

methods (gas chromatography with flame ionization detector for ethanol; gas chromatography mass spectrometry for barbiturates, cocaine and metabolites, methadone, and phencyclidine) at an additional charge. Amphetamines, benzodiazepines, opiates, and tetrahydrocannabinol metabolite that screen positive will be quantified with liquid chromatography tandem mass spectrometry at an additional charge.

Adulterants testing will be performed on all chain-of-custody urine samples as per regulatory requirements.

Method Name
Enzymatic Assay/Immunoassay

NY State Available
Yes

Specimen

Specimen Type
Urine

Specimen Required
Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required
Specimen Volume: 30 mL
Collection Instructions: Collect specimen in the provided container, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing.
Additional Information: Submitting less than 30 mL will compromise our ability to perform all necessary testing.

Forms
1. Chain of Custody Request is included in the Chain-of-Custody Kit (T282).
2. If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

Specimen Minimum Volume
15 mL

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Refrigerated (preferred)	7 days	
	Frozen	14 days	

Clinical & Interpretive

Clinical Information

This assay was designed to test for and confirm the following drugs, by either gas chromatography-mass spectrometry (GC-MS), gas chromatography flame ionization detection (GC-FID), or liquid chromatography tandem mass spectrometry (LC-MS/MS):

-Amphetamines
-Barbiturates
-Benzodiazepines
-Cocaine
-Ethanol
-Opiates
-Methadone
-Phencyclidine
-Tetrahydrocannabinol

This test uses the simple screening technique which involves immunoassay testing for drugs by class. All positive immunoassay screening results will be confirmed by the definitive assay available and is described in each individual reflex test (eg, AMPHU / Amphetamines Confirmation, Random, Urine). All positive screening results are confirmed by either GC-MS, GC-FID, or LC-MS/MS and quantitated before a positive result is reported.

Chain of custody is a record of the disposition of a specimen to document who collected it, who handled it, and who performed the analysis. When a specimen is submitted in this manner, analysis will be performed in such a way that it will withstand regular court scrutiny. Chain of custody is required whenever the results of testing could be used in a court of law. Its purpose is to protect the rights of the individual contributing the specimen by demonstrating that it was under the control of personnel involved with testing the specimen at all times; this control implies that the opportunity for specimen tampering would be limited.

Reference Values

Negative
Screening cutoff concentrations
Amphetamines: 500 ng/mL
Barbiturates: 200 ng/mL
Benzodiazepines: 100 ng/mL
Cocaine (benzoylecgonine-cocaine metabolite): 150 ng/mL
Ethanol: 10 mg/dL
Methadone metabolite: 300 ng/mL
Opiates: 300 ng/mL
Phencyclidine: 25 ng/mL
Tetrahydrocannabinol carboxylic acid: 50 ng/mL
This report is intended for use in clinical monitoring or management of patients. It is not intended for use in employment-related testing.

Interpretation

A positive result indicates that the patient has used the drugs detected in the recent past. For more information, see individual tests (eg, AMPHX / Amphetamines Confirmation, Chain of Custody, Random, Urine).

For information about drug testing, including estimated detection times, see Drug Class Testing.

Cautions

The test does not screen for drug classes other than those listed above. More comprehensive screening is available using the serum or urine drug screens (DSSX / Drug Screen, Prescription/Over the Counter, Chain of Custody, Serum or PDSUX / Drug Screen, Prescription/Over the Counter, Chain of Custody, Urine).

Clinical Reference

1. Physicians Desk Reference (PDR). 60th edition. Medical Economics Company; 2006
2. Bruntman LL. Goodman and Gilman's The Pharmacological Basis of Therapeutics. 11th ed. McGraw-Hill Book Company; 2006
3. Langman LJ, Bechtel LK, Holstege CP. Clinical toxicology. In: Rifai N, Chiu RWK, Young I, Burnham CAD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023: chap 43

Performance

Method Description

The amphetamines, barbiturates, benzodiazepines, cocaine, methadone metabolite, opiates, phencyclidine, and tetrahydrocannabinol metabolite assays are based on the kinetic interaction of microparticles in a solution (KIMS) as measured by changes in light transmission. In the absence of sample drug, soluble drug conjugates bind to antibody-bound microparticles, causing the formation of particle aggregates. As the aggregation reaction proceeds in the absence of sample drug, the absorbance increases. When a urine sample contains the drug in question, this drug competes with the drug derivative conjugate for microparticle-bound antibody. Antibody bound to sample drug is no longer available to promote particle aggregation, and subsequent particle lattice formation is inhibited. The presence of sample drug diminishes the increasing absorbance in proportion to the concentration of drug in the sample. Sample drug content is determined relative to the value obtained for a known cutoff concentration of drug.(Package inserts: EDDP Specific Urine Enzyme Immunoassay. Immunalysis; 09/2018; AMPS2 cobas. Roche Diagnostics; V 10.0 09/2018; BARB cobas. Roche Diagnostics; V 13.0 09/2021; THC2 cobas. Roche Diagnostics; V 13.0 03/2022; BNZ2 cobas. Roche Diagnostics; V 2.0 04/2024; COC2 cobas. Roche Diagnostics; V 9.0 03/2019; ETOH2 cobas. Roche Diagnostics; V 16.0 06/2022; OPI2 cobas. Roche Diagnostics; V 16.0 01/2022; PCP cobas. Roche Diagnostics; V 13.0 09/2021)

ETOHX Confirmation
Specimens are analyzed and quantified by headspace gas chromatography with flame ionization detection.(Baselt RC. Disposition of Toxic Drugs and Chemicals in Man, 10th edition, Biomedical Publications; 2014:2211)

PDF Report

No

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Day(s) Performed
Monday through Saturday

Report Available
2 to 3 days

Specimen Retention Time
2 weeks

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Superior Drive

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
80307

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CDA7X	Confirmed Drug Abuse Panel9, CoC, U	87428-9

Result ID	Test Result Name	Result LOINC® Value
36253	Amphetamines	43983-6
36254	Cocaine	43984-4
36255	Opiates	70151-6
36256	Phencyclidine	14310-7
36257	Tetrahydrocannabinol	14312-3
36261	Chain of Custody	77202-0
36262	Alcohol	42242-8
36258	Barbiturates	70155-7
36259	Benzodiazepines	14316-4

36260	Methadone metabolite	41858-2