MAYO CLINIC LABORATORIES

Test Definition: AMPAS

Amphetamine Panel, Serum

Overview

Useful For

Confirming drug exposure involving amphetamine-like stimulants such as methamphetamine, amphetamine, 3,4-methylenedioxymethamphetamine (MDMA), 3,4-methylenedioxyamphetamine (MDA), and 3,4-methylenedioxyethylamphetamine (MDEA)

Special Instructions

- Clinical Toxicology CPT Code Client Guidance

Method Name

Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)

NY State Available

Yes

Specimen

Specimen Type

Serum Red

Ordering Guidance

This test should only be ordered by healthcare professionals to monitor patients who have been prescribed amphetamines or identify misuse/abuse.

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Red top (Serum gel/SST are **not acceptable**)
Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL Serum
Collection Instructions: Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial.

Specimen Minimum Volume

Serum: 0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum Red	Refrigerated (preferred)	28 days	
	Ambient	28 days	
	Frozen	15 days	

Clinical & Interpretive

Clinical Information

Amphetamines are sympathomimetic amines that stimulate the central nervous system and, in part, suppress the appetite. Phentermine, amphetamine, and methamphetamine are prescription drugs for weight loss and, in the case of the later 2 drugs, attention deficit hyperactivity disorder. All the other amphetamines (3,4-methylenedioxyamphetamine [MDA], 3,4-methylenedioxymethamphetamine [MDMA], 3,4-methylenedioxyethylamphetamine [MDEA]) are Class I (distribution prohibited) compounds.

Because of their stimulant effects, the drugs are commonly sold illicitly and abused. Physiological symptoms associated with very high amounts of ingested amphetamine or methamphetamine include elevated blood pressure, dilated pupils, hyperthermia, convulsions, and acute amphetamine psychosis.

Reference Values

Therapeutic range and metabolite information (as applicable):
Methamphetamine: 10-50 ng/mL

Amphetamine: 20-30 ng/mL
Amphetamine is a separate prescribable drug as well as the metabolite of methamphetamine.

3,4-methylenedioxymethamphetamine (MDMA): Not Applicable
3,4-methylenedioxyamphetamine (MDA): Not Applicable
3,4-methylenedioxyethylamphetamine (MDEA): Not Applicable
MDA is a separate drug and also a metabolite of MDEA and MDMA.

Cutoff concentrations:
Methamphetamine: 5.0 ng/mL
Amphetamine: 5.0 ng/mL
MDMA: 5.0 ng/mL
MDA: 5.0 ng/mL
MDEA: 5.0 ng/mL

Interpretation

Clinically, the presence of amphetamines in serum can be used to verify adherence or compliance and discourage drug misuse, abuse, and diversion.

Cautions

Any aberrant result should be discussed with the patient and could be confirmed by re-testing or using an alternative matrix (eg. urine).

Clinical Reference

1. Jannetto PJ, Bratanow NC, Clark WA, et al. Executive Summary: American Association of Clinical Chemistry Laboratory Medicine Practice Guideline-Using Clinical Laboratory Tests to Monitor Drug Therapy in Pain Management Patients. J Appl Lab Med. 2018;2(4):489-526. doi:10.1373/jalm.2017.023341
2. Langman LJ, Bechtel LK, Holstege CP. Chapter 43: Clinical toxicology. In: Rifai N, Chiu RWK, Young I, Burnham C-AD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:chap 43
3. Baselt RC. Disposition of Toxic Drugs and Chemical in Man. 12th ed. Biomedical Publications; 2020
4. Milone MC, Shaw LM. Chapter 42: Therapeutic Drugs and Their Management. In: Rifai N, Chiu RWK, Young I, Burnham C-AD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:chap 42

Performance

Method Description

The serum sample is extracted through protein precipitation, diluted, and then analyzed by liquid chromatography tandem mass spectrometry for the presence of amphetamines.(Unpublished Mayo method)

PDF Report

No

Day(s) Performed

Tuesday

Report Available

2 to 9 days

Specimen Retention Time

14 days

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.

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Amphetamine Panel, Serum

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

G0480
80324 (if appropriate for select payers)
80359 (if appropriate for select payers)
Clinical Toxicology CPT Code Client Guidance

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
AMPAS	Amphetamine Panel, S	In Process

Result ID	Test Result Name	Result LOINC® Value
623599	Methamphetamine	3778-8
623600	Amphetamine	30112-7
623601	Methylenedioxymethamphetamine-MDMA	18356-6
623602	Methylenedioxyamphetamine-MDA	59837-5
623603	Methylenedioxyethylamphetamine-MDEA	33016-7