MAYO CLINIC LABORATORIES

Test Definition: COKEP

Cocaine and Metabolites, Plasma

Overview

Useful For

Confirming drug exposure involving stimulants such as cocaine, benzoylecgonine, m-hydroxy-benzoylecgonine, and cocaethylene

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

Plasma

Ordering Guidance

Additional drug panels and specific requests are available; call 800-533-1710.

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Gray top (sodium fluoride/potassium oxalate plasma) (PST are **not acceptable**)
Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL Plasma
Collection Instructions:
1. Within 2 hours of collection, centrifuge at 4 degrees C and aliquot plasma into a plastic vial.
2. Freeze the specimen.

Specimen Minimum Volume

Plasma: 0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Plasma	Frozen (preferred)	28 days	
	Refrigerated	6 days	

Clinical & Interpretive

Clinical Information

Cocaine is an alkaloid found in *Erythroxylon coca*, which grows principally in the northern South American Andes and, to a lesser extent, in India, Africa, and Java. Cocaine is a powerfully addictive stimulant drug. Cocaine abuse has a long history, is rooted in the drug culture in the United States and is one of the most common illicit drugs of abuse. Cocaine is rapidly metabolized primarily to benzoylecgonine, which is further metabolized to m-hydroxybenzoylecgonine (m-HOBE). Cocaine is frequently used with other drugs, most commonly alcohol, and the simultaneous use of both can be determined by the presence of the unique metabolite cocaethylene.

Reference Values

Negative
Positive results are reported with a quantitative result.

Cutoff concentrations:
Cocaine: 1.0 ng/mL
Benzoylecgonine: 1.0 ng/mL
Cocaethylene: 1.0 ng/mL
m-Hydroxybenzoylecgonine: 1.0 ng/mL

Interpretation

This test will identify patients who have taken cocaine.

Cautions

Specimens collected in serum gel tubes are not acceptable because the drug can absorb onto the gel and lead to falsely decreased concentrations.

Clinical Reference

1. 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
2. Baselt RC. Disposition of Toxic Drugs and Chemical in Man. 12th ed. Biomedical Publications; 2020

Performance

Method Description

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

PDF Report
No

Day(s) Performed
Thursday

Report Available
3 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.

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
80353 (if appropriate for select payers)
Clinical Toxicology CPT Code Client Guidance

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
COKEP	Cocaine and Metabolites, P	In Process

Result ID	Test Result Name	Result LOINC® Value
624105	Cocaine	3396-9
624106	Benzoylecgonine	3392-8
624107	Cocaethylene	27226-0
624108	m-Hydroxybenzoylecgonine	50593-3