Test Definition: VLTU

Volatile Screen, Random, Urine

Overview

Useful For

Detecting the presence of acetone, methanol, isopropanol, or ethanol in urine with subsequent quantitation

Testing Algorithm

This test includes analysis of methanol, ethanol, isopropanol, and acetone.

Special Instructions

- Clinical Toxicology CPT Code Client Guidance

Method Name

Headspace Gas Chromatography with Flame Ionization Detector (HSGC-FID)

NY State Available

Yes

Specimen

Specimen Type

Urine

Ordering Guidance

For best clinical correlation, the recommended tests are either VLTS / Volatile Screen, Serum; or VLTB / Volatile Screen, Blood.

Specimen Required

Supplies: Urine Tubes, 10 mL (T068)

Container/Tube: Plastic, 10-mL urine tube

Specimen Volume: 10 mL

Collection Instructions:

1. Collect a random urine specimen.
2. No preservative is required.

Forms

If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

Specimen Minimum Volume

1 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)	14 days	
	Ambient	24 hours	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Urine provides a medium for easy screening for methanol, ethanol, isopropanol, and acetone.

Reference Values

Methanol:
Not detected (Positive results are quantitated.)
Cutoff concentration: 10 mg/dL
Toxic concentration: > or =10 mg/dL

Ethanol:
Not detected (Positive results are quantitated.)
Cutoff concentration: 10 mg/dL

Isopropanol:
Not detected (Positive results are quantitated.)
Cutoff concentration: 10 mg/dL
Toxic concentration: > or =10 mg/dL

Acetone:
Not detected (Positive results are quantitated.)
Cutoff concentration: 10 mg/dL
Toxic concentration: > or =10 mg/dL

Interpretation

Methanol:
The presence of methanol indicates exposure that may result in intoxication, central nervous system (CNS) depression, and metabolic acidosis. Ingestion of methanol can be fatal if patients do not receive immediate medical treatment.

Ethanol:
The presence of ethanol indicates exposure that may result in intoxication, CNS depression, and metabolic acidosis.

Isopropanol:
The presence of isopropanol indicates exposure that may result in intoxication and CNS depression. Ingestion of isopropanol can be fatal if patients do not receive immediate medical treatment.

Acetone:
The presence of acetone may indicate exposure to acetone; it is also a metabolite of isopropanol and may be detected during ketoacidosis.

Cautions
Quantitation of acetone, methanol, isopropanol, or ethanol in urine correlates poorly with degree of intoxication.

Clinical Reference
1. Langman LJ, Bechtel LK, Holstege CP. Clinical toxicology. In: Rifai N, Chiu RWK, Young I, Burnham CD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:chap 43
2. Mayfield J, Mihic SJ. Ethanol. In: Brunton LL, Knollmann BC. Goodman and Gilman's: The Pharmacological Basis of Therapeutics. 13th ed. McGraw-Hill Education; 2022:chap 27
3. Olson KR, Anderson IB, Benowitz NL, et al. Specific Poisons and Drugs: Diagnosis and Treatment. In: Poisoning and Drug Overdose. 8th ed. McGraw-Hill; 2022:section II

Performance

Method Description
Samples are analyzed and quantified by headspace gas chromatography with flame ionization detection.(Baselt RC. Disposition of Toxic Drugs and Chemicals in Man. 10th ed. Biomedical Publications; 2014:2211)

PDF Report
No

Day(s) Performed
Monday through Saturday

Report Available
1 to 2 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 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
80320 (if appropriate for select payers)
Clinical Toxicology CPT Code Client Guidance

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
VLTU	Volatile Scrn, U	24350-1

Result ID	Test Result Name	Result LOINC® Value
8826	Volatile Scrn, U	12983-3
30904	Methanol, U	5695-2
30905	Ethanol, U	5645-7
30906	Acetone, U	5570-7
30907	Isopropanol, U	9434-2
34378	Chain of Custody	77202-0