Test Definition: ETGC

Ethyl Glucuronide Confirmation, Random, Urine

Overview

Useful For
Monitoring abstinence in clinical and justice system settings

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

NY State Available
Yes

Specimen

Specimen Type
Urine

Ordering Guidance
For situations where chain of custody is required, a Chain of Custody Kit (T282) is available. For chain-of-custody testing, order ETGX / Ethyl Glucuronide Confirmation, Chain of Custody, Random, Urine.

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

Additional Testing Requirements
If urine creatinine is required or adulteration of the specimen is suspected, the following test should also be ordered, ADULT / Adulterants Survey, Random, Urine.

Specimen Required
Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Plastic urine container
Submission Container/Tube: Plastic, 5-mL tube
Specimen Volume: 1 mL
Collection Instructions:
1. Collect a random urine specimen.
2. No preservative.

Additional Information:
1. No specimen substitutions.
2. STAT requests are **not accepted** for this test.
3. Submitting less than 1 mL will compromise our ability to perform all necessary testing.

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
-Kidney Transplant Test Request
-Therapeutics Test Request (T831)

Specimen Minimum Volume
0.5 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)	28 days	
	Ambient	28 days	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information
Ethyl glucuronide (EtG) and ethyl sulfate (EtS) are minor metabolites of ethanol that are detectable in body fluids following alcohol consumption and, less commonly, following extraneous exposure. EtG and EtS can be detected up to 5 days in urine using a cutoff of 500 ng/mL.(1)

Reference Values
Negative

Cutoff concentrations by liquid chromatography tandem mass spectrometry:
Ethyl glucuronide: 250 ng/mL
Ethyl sulfate: 100 ng/mL

Interpretation
A positive interpretation will be given if either the ethyl glucuronide (EtG) result is greater than or equal to 250 ng/mL or the ethyl sulfate (EtS) is greater than or equal to 100 ng/mL.

A "high" positive (ie, >1000 ng/mL) may indicate:
-Heavy drinking on the same day or previously (ie, previous day or 2).
-Light drinking the same day

A "low" positive (ie, 500-1000 ng/mL) may indicate:
-Previous heavy drinking (ie, previous 1-3 days)
-Recent light drinking (ie, past 24 hours)
-Recent intense "extraneous" exposure (ie, within 24 hours or less)

A "very low" positive (ie, 100-500 ng/mL) may indicate:
-Previous heavy drinking (ie, 1-3 days)
-Previous light drinking (ie, 12-36 hours)
-Recent "extraneous" exposure(2)

Cautions

Incidental exposure to alcohol in many daily use products (ie, hand sanitizers, mouthwash) may result in detectable levels of ethyl glucuronide (EtG) or ethyl sulfate (EtS).

In addition, upper respiratory infections as well as beta-glucuronidase hydrolysis may lower levels of EtG but do not seem to affect EtS.(2)

EtG/EtS results should be interpreted in the context of all available clinical and behavioral information.

Clinical Reference

1. Reisfield GM, Goldberger BA, Crews BO, et al. Ethyl glucuronide, ethyl sulfate, and ethanol in urine after sustained exposure to an ethanol-based hand sanitizer. J Anal Toxicol. 2011;35(2):85-91. doi:10.1093/anatox/35.2.85
2. Substance Abuse and Mental Health Services Administration (SAMSHA) Advisory: The role of biomarkers in the treatment of alcohol use disorders, 2012 Revision. HHS; 2012;11(2):1-7. doi:10.1037/e558582006-001
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 urine sample is diluted with internal standard in 0.1% formic acid for detection by tandem mass spectrometry.(Unpublished Mayo method)

PDF Report

No

Day(s) Performed

Monday, Wednesday, Friday

Report Available

3 to 5 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
80321 (if appropriate for select payers)
Clinical Toxicology CPT Code Client Guidance

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
ETGC	Ethyl Glucuronide Confirmation, U	93705-2

Result ID	Test Result Name	Result LOINC® Value
63421	Ethyl Glucuronide	58378-1
36848	Ethyl Sulfate	58425-0
36849	Ethyl Gluc/Sulfate Interpretation	69050-3